

# STIC Search Report

**EIC 1700**

**STIC Database Tracking Number: 214383**

**TO: Veronica Faison**  
**Location: REM 9B19**  
**Art Unit : 1755**  
**February 2, 2007**

**Case Serial Number: 10/816990**

**From: Mei Huang**  
**Location: EIC 1700**  
**REMSSEN 4B28**  
**Phone: 571/272-3952**  
**Mei.huang@uspto.gov**

## Search Notes

Examiner Faison,

Please feel free to contact me if you have any questions or if you would like to refine the search query,

Thank you for using STIC services!

Mei Huang

**Banks, Kendra**

214383

**From:** VERONICA FAISON GEE [veronica.faison@uspto.gov]  
**Sent:** Tuesday, January 30, 2007 5:21 PM  
**To:** STIC-EIC1700  
**Subject:** Database Search Request, Serial Number: 10/816,990

**Requester:**  
VERONICA FAISON GEE (P/1755)  
**Art Unit:**  
GROUP ART UNIT 1755  
**Employee Number:**  
75635  
**Office Location:**  
REM 09B19  
**Phone Number:**  
(571) 272-1366  
**Mailbox Number:**

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Cntr

JAN 31 RECD

Pat. & T.M. Office

**Case serial number:**  
10/816,990  
**Class / Subclass(es):**  
106/31.27  
**Earliest Priority Filing Date:**  
  
**Format preferred for results:**  
Paper  
**Search Topic Information:**  
Please search claims 1-9.  
**Special Instructions and Other Comments:**



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 United States Patent and Trademark Office  
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Bib Data Sheet

CONFIRMATION NO. 2016

<b>SERIAL NUMBER</b> 10/816,990	<b>FILING OR 371(c) DATE</b> 04/01/2004 <b>RULE</b>	<b>CLASS</b> 106	<b>GROUP ART UNIT</b> 1755	<b>ATTORNEY DOCKET NO.</b> P26,754-A USA
<b>APPLICANTS</b> Deverakonda S. Sarma, Ridgefield, CT; <b>** CONTINUING DATA *****</b> This appln claims benefit of 60/508,514 10/02/2003 <b>** FOREIGN APPLICATIONS *****</b>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 06/17/2004</b>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		<b>STATE OR COUNTRY</b> CT	<b>SHEETS DRAWING</b> 0	<b>TOTAL CLAIMS</b> 51 <b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> 23307				
<b>TITLE</b> Process and compositions for printing				
<b>FILING FEE RECEIVED</b> 1414	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

April 1, 2004

Express Mail Label No. EV375288133US  
Attorney Docket No: P26,754-A USA

*ink jet diluent  
dilut \$3*

CLAIMS

What is claimed is:

1. A method of forming an ink-jetable composition comprising:
  - (a) providing a viscous printing composition characterized in that has a Brookfield viscosity in excess of 100 cps at 25° C and is suitable for application to a substrate using an impact printing technique; and
  - (b) adding to said viscous printing composition a diluent under conditions and in an amount effective to produce an ink-jetable composition, said diluent comprising:
    - (i) at least one surface tension modifier;
    - (ii) optionally a solvent.
2. The method of claim 1 wherein said viscous printing composition is a hydrophilic viscous printing composition.
3. The method of claim 2 wherein said diluent surface tension modifier is selected from the group consisting of water soluble and water miscible glycol derivatives, water soluble and water miscible organic solvents having substantially similar surface active properties to said glycol derivatives, and mixtures of any two or more.

*glycol  
glycol ether  
hydroxide  
water*

April 1, 2004

Express Mail Label No. EV375288133US  
Attorney Docket No. P26,754-A USA

4. The method of claim 3 wherein said diluent further comprises at least one glycol and water.
5. The method of claim 4 wherein said diluent further comprises sodium hydroxide. *pH adjusting*
6. The method of claim 3 wherein said surface tension modifier is selected from the group consisting of N-alkyl heterocyclic amines, mono-, di-, and tri- propylene glycol n-butyl ether, mono-, di-, and tripropylene glycol n-propyl ether, mono- and diethylene glycol n-butyl ether, propylene glycol methyl ether acetate, and polypropylene glycol alkyl-ethers where the alkyl group has from about 1 to about 6 carbon atoms and is linear, branched, or cyclic, wherein said surface tension modifiers are further characterized by being water soluble or water miscible.
7. An ink-jettable composition produced in accordance with claim 1.
8. The ink-jettable composition of claim 7 wherein said surface tension modifier comprises propylene glycol phenyl ether.
9. The method of claim 1 wherein said surface tension modifier is selected from the group consisting of glycol derivatives, esters of difunctional fatty acids, and mixtures of any two or more, wherein said surface tension modifier is further characterized by being partially or completely miscible with said viscous printing *composition*



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713  
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

=> fil reg

FILE 'REGISTRY' ENTERED AT 12:54:54 ON 02 FEB 2007  
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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=> d his nofile

(FILE 'HOME' ENTERED AT 10:50:44 ON 02 FEB 2007)

FILE 'HCAPLUS' ENTERED AT 10:50:54 ON 02 FEB 2007

L1 1 SEA US2005073564/PN

FILE 'REGISTRY' ENTERED AT 10:52:04 ON 02 FEB 2007

L2 7 SEA (111-46-6/BI OR 1336-21-6/BI OR 25498-49-1/BI OR  
56-81-5/BI OR 57-55-6/BI OR 7732-18-5/BI OR 872-50-4/BI)

FILE 'HCAPLUS' ENTERED AT 11:00:35 ON 02 FEB 2007

L3 32928 SEA INKJET? OR (INK? OR PRINT?) (2A) (JET OR JETS OR  
JETTED OR JETTING# OR JETTABLE)

L4 QUE (MIXT# OR MIXTURE? OR BLEND? OR ADMIX? OR COMMIX? OR  
IMMIX? OR INTERMIX? OR COMPOSIT? OR COMPN# OR COMPSN# OR  
FORMULAT? OR INTERSPER?)/TI

L5 QUE VISCO?

L6 QUE DILUENT?

L7 QUE MIXT# OR MIXTURE? OR BLEND? OR ADMIX? OR COMMIX? OR  
IMMIX? OR INTERMIX? OR DOPE# OR DOPING# OR DOPANT# OR  
IMPREGNAT? OR COMPOSIT? OR COMPN# OR COMPSN# OR FORMULAT?  
OR COMBINAT? OR INTERSPER? OR AMALGAM?

L8 9388 SEA L3 AND L7

L9 868 SEA L8 AND L5

L10 18 SEA L9 AND L6

FILE 'REGISTRY' ENTERED AT 11:07:50 ON 02 FEB 2007

L11 1 SEA 56-81-5/RN

L12 1 SEA 57-55-6/RN

L13 1 SEA 111-46-6/RN

L14 1 SEA 25498-49-1/RN

E PROPYLENE GLYCOL PHENYL ETHER/CN

L15 1 SEA "PROPYLENE GLYCOL PHENYL ETHER"/CN

FILE 'HCAPLUS' ENTERED AT 11:24:12 ON 02 FEB 2007

L16 99200 SEA (L11 OR L12 OR L13 OR L14 OR L15)

L17 380257 SEA GLYCOL#

L18 QUE SURFACT? OR BIOSURFACT? OR HYDROTROP? OR (SURFACE(W) (   
ACTIVE# OR TENSION?) OR WETTING# OR DISPERS?) (A) (AGENT?   
OR MODIFIER? OR ADDITIVE? OR COMPOUND? OR COMPD# OR   
CMPD# OR CPD#) OR EMULSIFIER? OR DISPERSANT?

FILE 'REGISTRY' ENTERED AT 11:35:48 ON 02 FEB 2007

L19 1 SEA "SODIUM HYDROXIDE"/CN

L20 1 SEA "POTASSIUM HYDROXIDE"/CN

FILE 'HCAPLUS' ENTERED AT 11:37:56 ON 02 FEB 2007

L21 400769 SEA L19 OR SODIUM(W)HYDROXIDE# OR NAOH

L22 167366 SEA L20 OR POTASSIUM(W)HYDROXIDE# OR KOH

L23 62988 SEA SURFACE?(2A)TENSION?

L24 7401 SEA CPS OR CENTIPOISE?

L25 868 SEA L8 AND (L5 OR L24)

L26 18 SEA L25 AND L6  
 L27 4 SEA L26 AND L18  
 L28 11 SEA (L26 OR L27) AND (L16 OR L17)  
 L29 345 SEA L25 AND (L16 OR L17)  
 L30 143 SEA L29 AND L18  
 L31 57 SEA L30 AND L23  
 L32 5 SEA L31 AND (L21 OR L22)  
 L33 49 SEA L31 AND (1840-2003)/PY, PRY  
 L34 21 SEA L33 AND L4  
 L35 7 SEA L28 NOT L27  
 L36 7 SEA L26 NOT (L27 OR L35)  
 L37 5 SEA L32 NOT (L27 OR L35 OR L36)  
 L38 19 SEA L34 NOT (L27 OR L35 OR L36 OR L37)

=> fil hcap

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=> d l27 ibib abs hitstr hitind 1-4

L27 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:301767 HCAPLUS  
 DOCUMENT NUMBER: 142:356821  
 TITLE: Process and compositions for  
 ink-jet printing  
 INVENTOR(S): Sarma, Deverakonda S.  
 PATENT ASSIGNEE(S): Illinois Tool Works Inc., USA  
 SOURCE: Eur. Pat. Appl., 15 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 1520885	A1	20050406	EP 2004-255857	200409 24
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
US 2005073564	A1	20050407	US 2004-816990	200404 01
JP 2005113132	A	20050428	JP 2004-269790	200409 16
CA 2482493	A1	20050402	CA 2004-2482493	200409 24
KR 2005033006	A	20050408	KR 2004-76844	200409 24
CN 1618896	A	20050525	CN 2004-10081159	



PRIORITY APPLN. INFO.:	US 2003-508514P	P	20040930
			20031002
	US 2004-816990	A	20040401

AB Described is the preparation of a composition suitable for ink-jet printing, produced by blending a viscous printing composition originally suitable for application by an impact printing technique and a diluent. For hydrophilic viscous printing composition the diluent comprises: (i) water; (ii) a glycol; (iii) at least one surface tension modifier; (iv) optionally, ammonium hydroxide; and (v) optionally, one or more solvents. For lipophilic viscous printing composition the diluent comprises a surface tension modifier which is soluble in a fatty acid-based oil. Also described is a process for preparing the composition from a screen printing paste and a process for utilizing an ink jet to apply a viscous printing composition to a substrate.

IC ICM C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

ST Section cross-reference(s): 40

ST impact printing ink jet printing conversion diluent; surface tension modifier impact printing ink conversion

IT Inks  
(jet-printing; process and diluent for converting impact printing ink to ink-jet printing ink)

IT Screen printing  
(pastes; process and diluent for converting impact printing ink to ink-jet printing ink)

IT Surfactants  
Textile printing  
(process and diluent for converting impact printing ink to ink-jet printing ink)

IT Fatty acids, uses  
Glycols, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(process and diluent for converting impact printing ink to ink-jet printing ink)

IT Pastes  
(screen-printing; process and diluent for converting impact printing ink to ink-jet printing ink)

IT 56-81-5, Glycerine, uses 57-55-6, Propylene glycol, uses 111-46-6, Diethylene glycol, uses 872-50-4, N-Methylpyrrolidone, uses 1336-21-6, Ammonium hydroxide 7732-18-5, Water, uses 25498-49-1, Tripropylene glycol methyl ether  
RL: NUU (Other use, unclassified); USES (Uses)  
(process and diluent for converting impact printing

ink to ink-jet printing  
ink)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L27 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1999:426827 HCAPLUS  
DOCUMENT NUMBER: 131:89176  
TITLE: Water-soluble polymeric colorant having  
isocyanate substituent for paper and textile  
printing  
INVENTOR(S): Batlaw, Raj; Miley, John W.  
PATENT ASSIGNEE(S): Milliken Research Corp., USA  
SOURCE: U.S., 8 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5919846	A	19990706	US 1998-25824	19980219
WO 9942428	A1	19990826	WO 1999-US1608	19990126
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9923429	A	19990906	AU 1999-23429	19990126
EP 1056703	A1	20001206	EP 1999-903397	19990126
EP 1056703	B1	20030416		
R: DE, GB, IT				
PRIORITY APPLN. INFO.:			US 1998-25824	A 19980219
			WO 1999-US1608	W 19990126

AB The title colorant compound is the addition product of an organic chromophore having  $\geq 1$  reactive hydroxyl or amine substituent, a polyisocyanate, and a carboxylic acid, sulfonic acid, or salt. Such a compound provides excellent ink **compsns.** upon dilution and are very soluble within all the standard ink **diluents**,

provide good jettability, waterfastness, washfastness, etc., within ink-jet applications on various types of printing substrates. An example ink contained a colorant ( $\lambda_{\max}$  437), which was the reaction product of TMXDI, ethylene oxide-propylene oxide copolymer ether with Et 3-[4-[bis(2-hydroxyethyl)amino]-2-methylphenyl]-2-propenoate (2:1), and glycolic acid (neutralized with dimethylaminoethanol), diethylene glycol, Surfynol 465, surfactant, 1-methyl-2-pyrrolidone, and water.

IC ICM C08G018-02

INCL 524083000

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 35, 40

ST polyoxyalkylene polyurethane chromophore contg; colorant urethane ink jet formulation; paper jet printing ink polymeric colorant; textile printing ink polymeric colorant

IT Inks

(jet-printing; water-soluble polymeric colorant having isocyanate substituent for paper and textile printing)

IT Dyeing

Dyes

Silk

Textile printing

Viscose

Wool

(water-soluble polymeric colorant having isocyanate substituent for paper and textile printing)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:388242 HCAPLUS

DOCUMENT NUMBER: 131:33089

TITLE: Radiation-curable ink-jet ink compositions and printing method

INVENTOR(S): Johnson, Steve; Woods, Jill

PATENT ASSIGNEE(S): Xaar Technology Limited, UK

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 9929788	A1	19990617	WO 1998-GB3628	19981204

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,

CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 AU 9913463 A 19990628 AU 1999-13463

GB 2346889 A 20000823 GB 2000-13654 199812  
 04

PRIORITY APPLN. INFO.: GB 1997-25928 A 199812  
 04

WO 1998-GB3628 W 199712  
 05

WO 1998-GB3628 W 199812  
 04

AB A radiation-curable ink-jet ink comprises a colorant component, a diluent consisting essentially of reactive liquid material and, optionally, at least one photopolymn. catalyst, wherein the reactive liquid material comprises monofunctional material, difunctional material, and tri- or higher functional material and wherein the total amount of tri- or higher functional material in the ink forms 10-30 weight% of the total amount of reactive material in the ink, the total amount of monofunctional material in the ink is  $\geq 20$  weight% of the total amount of reactive material in the ink, and the total amount of difunctional material in the ink is at  $\geq 17.5$  weight% of the total amount of reactive material in the ink and is such that the total amount of di- or higher functional material is  $> 35$  weight%, and the viscosity of the ink is  $< 35$  mPa.s at  $30^\circ$ . A method of printing on a substrate (plastic) comprising directing an ink of this invention from the printhead of an ink-jet printer towards a print-receiving surface of the substrate and, during its travel from the printhead to the substrate and/or after deposition on the substrate, exposing the ink to a radiation (UV) to cure the ink. A black ink of this invention comprised trimethylolpropane ethoxylate triacrylate 10, a trifunctional urethane acrylate prepolymer 15, a silicone polyether acrylate 0.4, isobornyl acrylate 39.7, tripropylene glycol diacrylate 23, isopropylthioxanthone 2, 2-ethylhexyl p-dimethylaminobenzoate 3, 2-methyl-1-(4-methylthio)phenyl-2-morpholinopropan-1-one 5, carbon black 1.5 weight% and two dispersant.

IC ICM C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

ST ink jet printing acrylic radiation curable

IT Polysiloxanes, uses  
 Polyurethanes, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
 (acrylic; radiation-curable ink-jet  
 ink compns. and printing method)

IT Inks  
 (jet-printing; radiation-curable ink  
 -jet ink compns. and printing  
 method)

IT Ink-jet printing  
 (radiation-curable ink-jet ink  
 compns. and printing method)

IT Carbon black, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (radiation-curable ink-jet ink)

compns. and printing method)

IT Inks  
(radiation-curable; radiation-curable ink-jet  
ink compns. and printing method)

IT 57472-68-1, Dipropylene glycol diacrylate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Actilane 422; radiation-curable ink-jet  
ink compns. and printing method)

IT 5495-84-1, Speedcure ITX 7473-98-5 21245-02-3, Quantacure EHA  
71868-10-5, Irgacure 907 75980-60-8, Lucirin TPO  
RL: MOA (Modifier or additive use); USES (Uses)  
(radiation-curable ink-jet ink  
compns. and printing method)

IT 88-12-0, uses 147-14-8, Irgalite Blue GLVO 1047-16-1, Hostaperm  
Red E5B 02 1328-53-6, Monastral Green GNX C. 5888-33-5  
13463-67-7, Tioxide TR 92, uses 17741-63-8 28961-43-5, Actilane  
430 42978-66-5, Sartomer 306 72102-84-2, Cromophtal Orange GP  
76199-85-4, C.I. Pigment Yellow 185 86753-78-8, Solsperse 5000  
86753-82-4, Solsperse 22000 119510-12-2, Solsperse 24000  
226943-97-1, Actilane 251  
RL: TEM (Technical or engineered material use); USES (Uses)  
(radiation-curable ink-jet ink  
compns. and printing method)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE REFORMAT

L27 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:388241 HCAPLUS

DOCUMENT NUMBER: 131:33088

TITLE: Radiation-curable ink-jet  
ink compositions and printing  
method

INVENTOR(S): Johnson, Steve; Woods, Jill

PATENT ASSIGNEE(S): Xaar Technology Limited, UK

SOURCE: PCT Int. Appl., 40 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9929787	A2	19990617	WO 1998-GB3627	199812 04
WO 9929787	A3	19990722		
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2310633	A1	19990617	CA 1998-2310633	199812

AU 9913462	A	19990628	AU 1999-13462	04
				199812
				04
EP 1034228	A2	20000913	EP 1998-957039	199812
				04
R: AT, CH, DE, FR, GB, IT, LI, NL, SE, IE				
JP 2001525479	T	20011211	JP 2000-524367	199812
				04
JP 3619778	B2	20050216		
BR 9813371	A	20020924	BR 1998-13371	199812
				04
US 6593390	B1	20030715	US 2000-575868	200005
				19
PRIORITY APPLN. INFO.:		GB 1997-25929	A	199712
				05
		WO 1998-GB3627	W	199812
				04

AB A radiation-curable ink-jet ink having a viscosity  $\leq 35$  mPa.s at 30° comprises a colorant component, a diluent consisting essentially of reactive liquid material, and, optionally, at least one photopolymer catalyst, wherein the reactive liquid material is formed of both monofunctional and polyfunctional material and comprises 5-30 weight% of at least one oligomer. A method of printing on a substrate comprising directing an ink of this invention from the printhead of an ink-jet printer towards a print-receiving surface of the substrate and, during its travel from the printhead to the substrate and/or after deposition on the substrate, exposing the ink to a radiation (UV) to cure the ink. A black ink of this invention comprised trimethylolpropane ethoxylate triacrylate 10, a trifunctional urethane acrylate prepolymer 15, a silicone polyether acrylate 0.4, isobornyl acrylate 39.7, tripropylene glycol diacrylate 23, isopropylthioxanthone 2, 2-ethylhexyl p-dimethylaminobenzoate 3, 2-methyl-1-(4-methylthio)phenyl-2-morpholinopropan-1-one 5, carbon black 1.5 weight% and two dispersant.

IC ICM C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

ST ink jet printing acrylic radiation curable

IT Polysiloxanes, uses

Polyurethanes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(acrylic; radiation-curable ink-jet

ink compns. and printing method)

IT Inks

(jet-printing; radiation-curable ink

-jet ink compns. and printing

method)

IT Ink-jet printing

(radiation-curable ink-jet ink compns. and printing method)

IT Carbon black, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(radiation-curable ink-jet ink compns. and printing method)

IT Inks  
(radiation-curable; radiation-curable ink-jet ink compns. and printing method)

IT 57472-68-1, Dipropylene glycol diacrylate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Actilane 422; radiation-curable ink-jet ink compns. and printing method)

IT 5495-84-1, Speedcure ITX 7473-98-5 21245-02-3, Quantacure EHA  
71868-10-5, Irgacure 907 75980-60-8, Lucirin TPO  
RL: MOA (Modifier or additive use); USES (Uses)  
(radiation-curable ink-jet ink compns. and printing method)

IT 88-12-0, uses 147-14-8, Irgalite Blue GLVO 1047-16-1, Hostaperm  
Red E5B 02 1328-53-6, Monastral Green GNX C 5888-33-5  
13463-67-7, Tioxide TR 92, uses 17741-63-8 28961-43-5, Actilane  
430 42978-66-5, Sartomer 306 72102-84-2, Cromophtal Orange GP  
76199-85-4, C.I. Pigment yellow 185 86753-78-8, Solsperse 5000  
86753-82-4, Solsperse 22000 119510-12-2, Solsperse 24000  
226943-97-1, Actilane 251  
RL: TEM (Technical or engineered material use); USES (Uses)  
(radiation-curable ink-jet ink compns. and printing method)

=> d l35 ibib abs hitstr hitind 1-7

L35 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:700065 HCAPLUS  
DOCUMENT NUMBER: 145:147571  
TITLE: Curable resin compositions with  
storage stability, workability, and heat,  
chemical, and electroless plating resistance for  
ink-jet printing and  
printed circuit boards  
INVENTOR(S): Ushiki, Shigeru; Kusama, Masatoshi; Makita,  
Shohei  
PATENT ASSIGNEE(S): Taiyo Ink Mfg. Co., Ltd., Japan  
SOURCE: PCT Int. Appl., 26 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	
WO 2006075654	A1	20060720	WO 2006-JP300279	200601 12

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM,  
KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG,

MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT,  
 RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,  
 IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
 TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

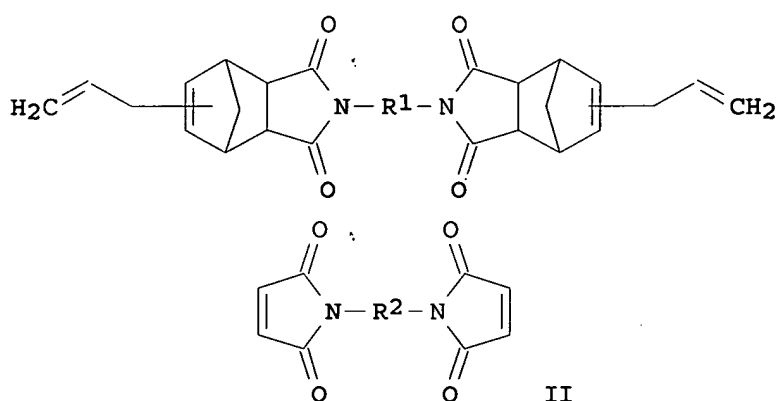
PRIORITY APPLN. INFO.:

JP 2005-4766

A

200501  
 12

GI



- AB Title curable resin **compns.** with **viscosity** at 25° ≤150 mPa·s comprise (A) a bisallylnadiimide compound I, (B) a bismaleimide compound II, and (C) a **diluent**, wherein R1 = C2-18 alkyl, aryl, or aralkyl and R2 = C2-32 alkyl, aryl, or aralkyl. Thus, a **composition** comprising BANI-X (bisallylnadiimide) 8, BMI 80 (bismaleimide) 2, propylene glycol monomethyl ether acetate 10, and 2-methyl-1-[4-(methylthio)phenyl]-2-morpholinopropan-1-one 0.2 parts showed **viscosity** 18 mPa·s, good coating hardness, chemical, solvent, solder heat, and electroless plating resistance, curability, and storage stability.
- CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 76
- ST curable resin **compn** storage stability workability; heat chem electroless resistance **inkjet** printing printed circuit board; bisallylnadiimide bismaleimide copolymer
- IT Polyimides, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic; curable resin **compns.** with storage stability, workability, and heat, chemical, and electroless plating resistance for **ink-jet printing** and **printed circuit boards**)
- IT **Ink-jet printing**  
 Printed circuit boards  
 (curable resin **compns.** with storage stability,



workability, and heat, chemical, and electroless plating resistance  
for ink-jet printing and  
printed circuit boards)

IT Polyimides, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
or engineered material use); PREP (Preparation); USES (Uses)  
(curable resin compns. with storage stability,  
workability, and heat, chemical, and electroless plating resistance  
for ink-jet printing and  
printed circuit boards)

IT Coating materials

(heat- and solvent-resistant; curable resin compns.  
with storage stability, workability, and heat, chemical, and  
electroless plating resistance for ink-jet  
printing and printed circuit boards)

IT 899435-45-1P 899435-46-2P 899435-47-3P 899435-48-4P  
899435-49-5P 899435-50-8P 899435-51-9P 899797-25-2P  
899797-26-3P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
or engineered material use); PREP (Preparation); USES (Uses)  
(curable resin compns. with storage stability,  
workability, and heat, chemical, and electroless plating resistance  
for ink-jet printing and  
printed circuit boards)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L35 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:282667 HCAPLUS

DOCUMENT NUMBER: 138:305628

TITLE: UV-curable hot-melt polyurethane acrylate  
compositions

INVENTOR(S): Schmidt, Kris Alan; Doan, Vu A.; Xu, Pingyong;  
Stockwell, John S.; Holden, Susan Kay

PATENT ASSIGNEE(S): 3d Systems, Inc., USA

SOURCE: PCT Int. Appl., 16 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003029366	A1	20030410	WO 2002-US31476	200210 02

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM,  
PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
TG

US 2003092820 A1 20030515 US 2001-971247 200110  
03

US 6841589 B2 20050111  
EP 1458825 A1 20040922 EP 2002-784003 200210  
02

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

JP 2005504860 T 20050217 JP 2003-532598 200210  
02

US 2005080163 A1 20050414 US 2004-958966 200410  
04

PRIORITY APPLN. INFO.: US 2001-971247 A 200110  
03

WO 2002-US31476 W 200210  
02

AB The **composition**, useful for three-dimensional **ink-jet printing**, adhesives and coatings, comprises  
(i)  $\geq 1$  UV curable urethane (meth)acrylate resin; (ii)  $\geq 1$  wax; (iii)  $\geq 1$  (meth)acrylate **diluent**; (iv)  $\geq 1$  photoinitiator; and (v)  $\geq 1$  polymerization inhibitor; wherein the amount of wax is sufficient to phase change the UV curable **composition** after jetting. Thus, a **composition** comprising CN 980 (urethane acrylate) 7.2, CN 2901 (urethane acrylate) 27.5, SR 205 (triethylene glycol dimethacrylate) 33, SR 493 D (tridecyl methacrylate) 19, ADS 038 (urethane wax) 7, ADS 043 (urethane wax) 4.3, I 184 (photoinitiator) 2% was UV cured, showing **viscosity** (80°) 12.9 cps, elongation 9%, and tensile strength 2340 psi.

IC ICM C09D011-10  
ICS C09D011-00; C08F290-06; B29C067-00

CC 42-12 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38

ST polyurethane acrylate **ink jet printing**  
; hot melt **compn** UV curability

IT Waxes  
RL: MOA (Modifier or additive use); USES (Uses)  
(UV-curable hot-melt polyurethane acrylate **compns.**)

IT Polyurethanes, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(acrylic; UV-curable hot-melt polyurethane acrylate **compns.**)

IT Adhesives  
Coating materials  
(hot-melt; UV-curable hot-melt polyurethane acrylate **compns.** for)

IT **Inks**  
(**Jet printing**, hot-melt; UV-curable hot-melt polyurethane acrylate **compns.** for)

IT Acrylic polymers, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(polyurethane-; UV-curable hot-melt polyurethane acrylate  
compsns.)

IT Polyurethanes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(wax; UV-curable hot-melt polyurethane acrylate compsns  
.)

IT 506432-22-0, ADS 038 506432-42-4, ADS 043

RL: MOA (Modifier or additive use); USES (Uses)

(UV-curable hot-melt polyurethane acrylate compsns.)

IT 505097-01-8 505097-02-9 506432-43-5 506435-79-6 506443-91-0

RL: POF (Polymer in formulation); TEM (Technical or engineered  
material use); USES (Uses)

(UV-curable hot-melt polyurethane acrylate compsns.)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L35 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:946209 HCAPLUS

DOCUMENT NUMBER: 138:14363

TITLE: Dual curable encapsulating material comprising  
epoxy resin for ink jet  
printer heads

INVENTOR(S): Patil, Girish Shivaji

PATENT ASSIGNEE(S): Lexmark International, Inc., USA

SOURCE: PCT Int. Appl., 21 pp.:

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002098664	A1	20021212	WO 2002-US17135	20020530
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: US 2001-874688 A 20010605

AB The invention relates to an improved encapsulating material for electronic components; to a method for protecting electronic components of an ink jet printhead and to ink jet printheads constructed using the encapsulating material. A dual curable encapsulant is provided for use in protecting elec. components. The encapsulant contains from about 5 to about 20 percent by weight of a

multifunctional epoxy material, from about 70 to about 90 percent by weight of a di-functional epoxy material, a catalytic amount of photocurative catalyst and co-catalyst, a reactive diluent and a silica-based viscosity modifier. Ink

jet printer parts assembled and protected with the dual curable encapsulant exhibit enhanced ink corrosion protection.

- IC ICM B41J002-035
- ICS H01R035-00; G11B005-127
- CC 37-6 (Plastics Manufacture and Processing)
- Section cross-reference(s): 42, 76
- ST epoxy resin photocurable encapsulating compn ink
- jet printer head
- IT Epoxy resins, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
- (dual curable encapsulating material composition)
- IT Ink-jet printer heads
- Ink-jet printers
- (dual curable encapsulating material for protecting electronic component on ink-jet printer heads)
- IT Phenolic resins, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
- (epoxy, novolak; dual curable encapsulating material composition)
- IT Printed circuits
- (flexible; dual curable encapsulating material for protecting electronic component on ink-jet printer heads)
- IT Onium compounds
- RL: CAT (Catalyst use); USES (Uses)
- (iodonium, aryl, photocurative catalyst; dual curable encapsulating material composition)
- IT Epoxy resins, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
- (phenolic, novolak; dual curable encapsulating material composition)
- IT Sulfonium compounds
- RL: CAT (Catalyst use); USES (Uses)
- (photocurative catalyst; dual curable encapsulating material composition)
- IT Phenolic resins, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
- (polyglycidyl ether derivative; dual curable encapsulating material composition)
- IT 119-53-9, 2-Hydroxy-1,2-diphenylethanone 533-01-7, Cupric benzoate
- RL: CAT (Catalyst use); USES (Uses)
- (dual curable encapsulating material composition)
- IT 9003-35-4D, polyglycidyl ether derivative 17557-23-2, Neopentyl glycol diglycidyl ether 25068-38-6
- RL: TEM (Technical or engineered material use); USES (Uses)
- (dual curable encapsulating material composition)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:505417 HCAPLUS  
 DOCUMENT NUMBER: 137:64701  
 TITLE: Weather-resistant, ink-jettable, radiation-curable, fluid compositions particularly suitable for

INVENTOR(S): outdoor print applications  
 Lee, Jennifer L.; Thery, Ronald K.; Ylitalo,  
 Caroline M.; Severance, Richard L.; Wu, Dong;  
 Nerad, Bruce A.; Lemire, Verna J.; Carlson,  
 James G.; Hunt, William J.  
 PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA  
 SOURCE: U.S. Pat. Appl. Publ., 20 pp., Cont.-in-part of  
 U. S. Ser. No. 711,336, abandoned.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2002086914	A1	20020704	US 2001-8235	200111 07
				200011 09
PRIORITY APPLN. INFO.:			US 2000-711336	B2

AB Low **viscosity**, radiation-curable fluid  
**formulations** contain (a) an oligo/resin component, (b) a  
 radiation-curable, reactive **diluent** comprising (i) 0.1-50%  
 of an adhesion promoting, radiation-curable component containing  
 $\geq 1$  heterocyclic, radiation-curable monomer and/or an  
 alkoxylated monomer with pendant alkoxylated functionality and no  
 main chain alkoxylated functionality and (ii)  $\leq 10\%$  of an  
 optional alkoxylated, radiation curable monomer containing main-chain  
 alkoxylated functionality, optionally a high Tg component and  
 multifunctional monomer. After curing, the **compos.** form  
 durable, weatherable, abrasion-resistant, printed images on a wide  
 variety of porous and nonporous substrates, e.g., including vinyl or  
 other polymer films commonly used for signage, retroreflective  
 signage or other retroreflective items. The **composition** of a  
 red ink contained 4.25 parts C.I. Pigment Red 179, 4.25 parts C.I.  
 Pigment Red 224, 10 parts hexanediol diacrylate, 14 parts isobornyl  
 acrylate, 42 parts 2-(2-ethoxyethoxy)ethyl acrylate, 20 parts  
 Sartomer CN 964B85, 3 parts EFKA 4046, and 2.5 parts Irgacure 819.  
 The ink had power law index 0.97, **viscosity** (25°  
 and 1000 s-1) 32.4 cP, and 10 cP (52° at 1000 s-1).

IC ICM C08F002-46

ICS C08J003-28; C08K003-00

INCL 522075000

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

ST radiation curable **ink jet** oligomer resin

adhesion promoting agent

IT **Inks**

(**jet-printing**; mar- and weather-resistant

UV-curable inks for films for outdoor applications)

IT 1985-51-9, Neopentyl **glycol** dimethacrylate 2223-82-7,

Neopentyl **glycol** diacrylate 45023-48-1, Propoxyethyl

methacrylate 45127-97-7, 2-(2-Ethoxyethoxy)ethyl methacrylate

84170-74-1, Propoxylated neopentyl **glycol** diacrylate

86351-09-9, Propoxyethyl acrylate 172252-59-4, Propoxylated

neopentyl **glycol** dimethacrylate

RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (adhesion promoting monomer; mar- and weather-resistant UV-curable inks for films for outdoor applications)

IT 88-12-0, uses 110-91-8D, Morpholine, reaction products with tetraethylene glycol diacrylate 17831-71-9D, Tetraethylene glycol diacrylate, reaction products with morpholine 204528-73-4, CN 386 426833-66-1, CN 381 426833-68-3, CN 383

RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (gloss promoting agent; mar- and weather-resistant UV-curable inks for films for outdoor applications)

IT 24980-41-4DP, Polycaprolactone, acrylate-terminated, reaction products with Vestanat TMDI and Tone 0305 25248-42-4DP, Polycaprolactone, acrylate-terminated, reaction products with Vestanat TMDI and Tone 0305 54735-63-6DP, TONE 0305, reaction products with Vestanat TMDI and polycaprolactone acrylate 101484-78-0DP, Tone M 100, reaction products with Vestanat TMDI 179987-35-0DP, Vestanat TMDI, reaction products with polycaprolactone acrylate

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(ink composition containing; mar- and weather-resistant UV-curable inks for films for outdoor applications)

IT 28675-80-1, Isooctyl methacrylate 29590-42-9, Isooctyl acrylate  
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
(reactive diluent containing; mar- and weather-resistant UV-curable inks for films for outdoor applications)

L35 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:368588 HCAPLUS

DOCUMENT NUMBER: 136:387535

TITLE: Weather-resistant radiation-curable ink  
-jet ink  
compositions with low viscosity  
for outdoor applications

INVENTOR(S): Lee, Jennifer L.; Thery, Ronald K.; Ylitalo, Caroline M.; Severance, Richard L.; Wu, Dong; Nerad, Bruce A.; Lemire, Verna J.; Carlson, James G.; Hunt, William J.

PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA

SOURCE: PCT Int. Appl., 53 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002038688	A2	20020516	WO 2001-US46508	20011107
WO 2002038688	A3	20021031		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,			

EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
 JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD,  
 SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN,  
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,  
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
 TD, TG

CA 2425945	A1	20020516	CA 2001-2425945	200111 07
AU 2002030607	A5	20020521	AU 2002-30607	200111 07
EP 1355999	A2	20031029	EP 2001-990840	200111 07
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004514014	T	20040513	JP 2002-542010	200111 07
PRIORITY APPLN. INFO.:		US 2000-711336	A	200011 09
		WO 2001-US46508	W	200111 07

AB Title **composition** comprises (a) an oligo/resin component, (b) a radiation curable, reactive **diluent** comprising (i) 0.1-50 wt% of an adhesion promoting, radiation curable component containing  $\geq 1$  heterocyclic, radiation curable monomer and/or an alkoxyated monomer with pendant alkoxyated functionality and no main chain alkoxyated functionality and (ii)  $\leq 10$  wt% of an optional alkoxyated, radiation curable monomer containing main-chain alkoxyated functionality. The **comps.**, yielding durable, weatherable, abrasion resistant, printed images, are very suitable for outdoor printing applications, especially for printing outdoor graphics onto a variety of surfaces, including vinyl or other polymer films commonly used for signage, retroreflective signage or other retroreflective items.

IC ICM C09D011-10

CC 42-12 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 74

ST radiation curable **ink jet** oligomer resin  
 adhesion promoting agent

IT Carbon black, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Lamp Black LB 101 Pigment I; manufacture of weather-resistant radiation-curable **ink-jet ink comps.** for outdoor applications)

IT Acrylic polymers, uses  
 Polyesters, uses  
 Polyurethanes, uses  
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (aliphatic; manufacture of weather-resistant radiation-curable

ink-jet ink compns. for outdoor applications)

IT Water-resistant materials (jet-printing inks; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Inks (jet-printing, water-resistant; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Coloring materials Interpenetrating polymer networks (manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polyesters, uses RL: TEM (Technical or engineered material use); USES (Uses) (manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Crosslinking (photochem.; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polyesters, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyacrylate-; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polyurethanes, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyester-; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polysiloxanes, uses RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (polyether-; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polyethers, uses RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (siloxane-; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT Polyesters, uses RL: TEM (Technical or engineered material use); USES (Uses) (substrate; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)

IT 1985-51-9, Neopentyl glycol dimethacrylate 2223-82-7, Neopentyl glycol diacrylate 2235-00-9, N-Vinylcaprolactam 2399-48-6, Tetrahydrofurfuryl acrylate 2455-24-5, Tetrahydrofurfuryl methacrylate 7328-17-8, 2-(2-Ethoxyethoxy)ethyl acrylate 45023-48-1, Propoxyethyl



- methacrylate 45127-97-7, 2-(2-Ethoxyethoxy)ethyl methacrylate  
 84170-74-1, Propoxylated neopentyl glycol diacrylate  
 86351-09-9, Propoxyethyl acrylate 172252-59-4, Propoxylated  
 neopentyl glycol dimethacrylate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (adhesion promoting agent; manufacture of weather-resistant  
 radiation-curable **ink-jet ink**  
**compns.** for outdoor applications)
- IT 28675-80-1, Isooctyl methacrylate 29590-42-9, Isooctyl acrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (branched component; manufacture of weather-resistant  
 radiation-curable **ink-jet ink**  
**compns.** for outdoor applications)
- IT 88-12-0, uses 110-91-8D, Morpholine, reaction products with  
 tetraethylene glycol diacrylate 17831-71-9D,  
 Tetraethylene glycol diacrylate, reaction products with  
 morpholine 204528-73-4, CN 386 426833-66-1, CN 381  
 426833-68-3, CN 383  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (gloss promoting agent; manufacture of weather-resistant  
 radiation-curable **ink-jet ink**  
**compns.** for outdoor applications)
- IT 5888-33-5D, Isobornyl acrylate, polymers 7534-94-3D, Isobornyl  
 methacrylate, polymers  
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical  
 or engineered material use); USES (Uses)  
 (high Tg component; manufacture of weather-resistant radiation-curable  
**ink-jet ink compns.** for  
 outdoor applications)
- IT 24980-41-4DP, Polycaprolactone, acrylate-terminated, reaction  
 products with Vestanat TMDI and Tone 0305 25248-42-4DP,  
 Polycaprolactone, acrylate-terminated, reaction products with  
 Vestanat TMDI and Tone 0305 54735-63-6DP, TONE 0305, reaction  
 products with Vestanat TMDI and polycaprolactone acrylate  
 101484-78-0DP, Tone M 100, reaction products with Vestanat TMDI  
 179987-35-0DP, Vestanat TMDI, reaction products with  
 polycaprolactone acrylate  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
 (Properties); TEM (Technical or engineered material use); PREP  
 (Preparation); USES (Uses)  
 (ink **composition** containing; manufacture of weather-resistant  
 radiation-curable **ink-jet ink**  
**compns.** for outdoor applications)
- IT 425670-79-7P, CN 964B85-2-(2-Ethoxyethoxy)ethyl acrylate-Hexanediol  
 diacrylate-Isobornyl acrylate copolymer 425670-90-2P  
 425670-91-3P 425670-93-5P 425670-95-7P 426833-84-3P  
 426833-85-4P 426833-86-5P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
 (Properties); TEM (Technical or engineered material use); PREP  
 (Preparation); USES (Uses)  
 (manufacture of weather-resistant radiation-curable **ink-**  
**jet ink compns.** for outdoor  
 applications)
- IT 25608-33-7, Paraloid B 60 425670-81-1 425670-84-4 425670-86-6  
 425670-88-8  
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical  
 or engineered material use); USES (Uses)  
 (manufacture of weather-resistant radiation-curable **ink-**  
**jet ink compns.** for outdoor  
 applications)

IT 13048-33-4 58264-26-9, Hexanediol dimethacrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (multifunctional monomer; manufacture of weather-resistant  
 radiation-curable ink-jet ink  
 compns. for outdoor applications)

IT 128-69-8, C.I. Pigment Red 224 3089-17-6, RT 343D 5521-31-3,  
 C.I. Pigment Red 179 872613-79-1, Fanchon Fast Yellow Y 5688  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (pigment; manufacture of weather-resistant radiation-curable  
 ink-jet ink compns. for  
 outdoor applications)

IT 9002-86-2, Polyvinyl chloride 9011-14-7, Polymethyl methacrylate  
 25038-59-9, Pet polymer, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate; manufacture of weather-resistant radiation-curable  
 ink-jet ink compns. for  
 outdoor applications)

L35 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:368492 HCAPLUS

DOCUMENT NUMBER: 133:18918

TITLE: Energy-curable gravure and ink  
 jet inks incorporating grafted  
 pigments

INVENTOR(S): Laksin, Mikhail; Chatterjee, Subhankar;  
 Schwartz, Russell; Merchak, Paul A.; Aurenty,  
 Patrice; Stone, Edward; Kitora, Gordon

PATENT ASSIGNEE(S): Sun Chemical Corp., USA

SOURCE: PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000031189	A1	20000602	WO 1999-US27038	199911 15
W: CA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2351472	A1	20000602	CA 1999-2351472	199911 15
EP 1133533	A1	20010919	EP 1999-958989	199911 15
EP 1133533	B1	20040714		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2003531223	T	20031021	JP 2001-576398	199911 15
TW 255284	B	20060521	TW 2000-89104349	200003 10
PRIORITY APPLN. INFO.:			US 1998-198113	A

199811  
23

WO 1999-US27038

W

199911  
15

- AB Solvent-free, energy-curable low-viscosity gravure and ink jet inks contain a pigment; a rheol. additive having the structure P(UY)<sub>s</sub> (P is the residue of an organic pigment or dye; Y is a polyalkylene oxide moiety; U is a linking moiety covalently bonding Y to P; s = 1-3); and an energy-curable liquid vehicle which may be an UV cationic, thermal cationic or a free radical-initiated polymerization system, cured by actinic radiation, optionally containing a photoinitiator. Thus, Cu phthalocyaninesulfonyl chloride was condensed with XTJ 507 (H<sub>2</sub>N-terminated 5:95 ethylene oxide-propylene oxide copolymer) to give a rheol. additive. A radiation-curable gravure ink was formulated from Cyracure 6110 15, a modified pigment from 79% Pigment Blue 15:4 and 12% (sic) of the rheol. additive 5, CD 1012 2, Irgacure 261 0.5, triethylene glycol divinyl ether 76, polyethylene wax 1, and silicone DC 57 0.5 weight%. The ink had lower viscosity and gave a print of higher color d. and gloss than a conventional ink based on Pigment Blue 15:4.
- IC ICM C09B069-00  
ICS C09D011-10; C09B067-22; C09D011-02
- CC 42-12 (Coatings, Inks, and Related Products)
- ST gravure ink radiation curable; ink jet ink radiation curable; polyoxyalkylene grafted phthalocyanine pigment
- IT Linseed oil  
RL: TEM (Technical or engineered material use); USES (Uses) (epoxidized; radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT Inks  
(gravure; radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT Inks  
(jet-printing; radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT Electron beams  
UV radiation  
(radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT Carbon black, uses  
RL: TEM (Technical or engineered material use); USES (Uses) (radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT 2386-87-0, 3,4-Epoxy cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate  
RL: TEM (Technical or engineered material use); USES (Uses) (Cyracure UVI 6105, Cyracure UVI 6110; radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT 18724-32-8  
RL: TEM (Technical or engineered material use); USES (Uses) (S 200 (reactive diluent); radiation-curable gravure and ink jet inks incorporating grafted pigments)
- IT 2602-34-8, Silane, triethoxy[3-(oxiranylmethoxy)propyl]-

RL: TEM (Technical or engineered material use); USES (Uses)  
(Z 6041; radiation-curable gravure and ink jet  
inks incorporating grafted pigments)

IT 32760-80-8, Irgacure 261 60933-18-8, Fluorad FC 520 104558-94-3,  
Cyracure UVI 6974 139301-16-9, CD 1012 273203-78-4, TLC 14-12

RL: CAT (Catalyst use); USES (Uses)  
(radiation-curable gravure and ink jet  
inks incorporating grafted pigments)

IT 96-08-2, Limonene dioxide 147-14-8, C.I. Pigment Blue 15:4  
765-12-8, Triethylene glycol divinyl ether 1328-53-6,  
C.I. Pigment Green 7 2379-79-5, C.I. Pigment Red 196 2512-29-0,  
C.I. Pigment Yellow 1 2530-83-8, Z 6040 2786-76-7, C.I. Pigment  
Red 170 3388-04-3, E 6250 3468-63-1, C.I. Pigment Orange 5  
3520-72-7, C.I. Pigment Orange 13 4531-49-1, C.I. Pigment Yellow  
17 5102-83-0, C.I. Pigment Yellow 13 5280-68-2, C.I. Pigment Red  
146 5468-75-7, C.I. Pigment Yellow 14 5567-15-7, C.I. Pigment  
Yellow 83 6041-94-7, C.I. Pigment Red 2 6358-31-2, C.I. Pigment  
Yellow 74 6358-85-6, C.I. Pigment Yellow 12 6358-87-8, C.I.  
Pigment Red 38 6358-90-3, C.I. Pigment Red 42 6410-38-4, C.I.  
Pigment Red 9 6448-95-9, C.I. Pigment Red 22 6471-49-4, C.I.  
Pigment Red 23 6471-50-7, C.I. Pigment Red 14 6486-23-3, C.I.  
Pigment Yellow 3 6505-28-8, C.I. Pigment Orange 16 6528-34-3,  
C.I. Pigment Yellow 65 6535-46-2, C.I. Pigment Red 112  
6655-84-1, C.I. Pigment Red 17 6883-91-6, C.I. Pigment Red 37  
12225-18-2, C.I. Pigment Yellow 97 12225-23-9, C.I. Pigment Yellow  
106 13515-40-7, C.I. Pigment Yellow 73 14302-13-7, C.I. Pigment  
Green 36 14569-54-1, C.I. Pigment Yellow 63 15793-73-4, C.I.  
Pigment Orange 34 23792-68-9, C.I. Pigment Yellow 188  
32432-45-4, C.I. Pigment Yellow 98 52320-66-8, C.I. Pigment Yellow  
75 61932-63-6, C.I. Pigment Red 210 68610-86-6, C.I. Pigment  
Yellow 127 68610-87-7, C.I. Pigment Yellow 114 68859-25-6, C.I.  
Pigment Yellow 37 78952-72-4, C.I. Pigment Yellow 174  
90268-23-8, C.I. Pigment Yellow 126 90268-24-9, C.I. Pigment  
Yellow 176 140114-63-2, C.I. Pigment Red 238 141952-16-1, ERLX  
4683 181285-33-6, C.I. Pigment Yellow 136 215247-95-3, C.I.  
Pigment Violet 23

RL: TEM (Technical or engineered material use); USES (Uses)  
(radiation-curable gravure and ink jet  
inks incorporating grafted pigments)

IT 6358-85-6D, C.I. Pigment Yellow 12, polyoxyalkylene derivative  
9003-11-6D, Ethylene oxide-propylene oxide copolymer, copper  
phthalocyaninesulfonamide-terminated

RL: MOA (Modifier or additive use); USES (Uses)  
(rheol. additive; radiation-curable gravure and ink  
jet inks incorporating grafted pigments)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L35 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:394739 HCAPLUS

DOCUMENT NUMBER: 122:136377

TITLE: High-density, low-viscosity  
ink for jet printing  
bar code labels

INVENTOR(S): Hinton, Stephanie S.

PATENT ASSIGNEE(S): Porelon, Inc., USA

SOURCE: U.S., 4 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5344483	A	19940906	US 1992-860098	199203 30
PRIORITY APPLN. INFO.:			US 1992-860098	199203 30

AB An ink composition suitable for ink jet printing is made from a fatty acid ester base and a diluent, wherein the base consists essentially of a fatty acid which is liquid at room temperature, a polyalkylene glycol, and a dye which was reacted with the fatty acid to form an ester. The base is combined with a compatible diluent, such as an alc. (methoxytriglycol) having a low viscosity and low vapor pressure, to provide an ink composition especially suited for ink jet dot printing of high-definition symbols such as bar codes. The ink of the invention resists spreading on rough surfaces, and thus can be used to print bar codes directly on the sides of paperboard cartons. A oleate base composition comprised oleic acid (Emery 233LL) 50.25, polyethylene glycol-200 20.00, Solvent Black 7, 29.50, and antioxidant 0.25%.

IC ICM C09D011-02  
 INCL 106-22R  
 CC 42-12 (Coatings, Inks, and Related Products)  
 ST Solvent Black oleate jet printing ink; polyethylene glycol jet printing ink; bar code printing ink paperboard  
 IT Inks  
     (jet-printing, dye fatty acid ester base for high-d., low-viscosity ink for jet printing bar code labels)  
 IT 112-35-6, Methoxytriglycol  
 RL: TEM (Technical or engineered material use); USES (Uses)  
     (diluent; high-d., low-viscosity ink for jet printing bar code labels)  
 IT 8005-02-5D, Solvent Black 7, ester 138860-64-7D, Emersol 233LL, ester with Solvent Black 7  
 RL: TEM (Technical or engineered material use); USES (Uses)  
     (dye fatty acid ester base for high-d., low-viscosity ink for jet printing bar code labels)  
 IT 25322-68-3, Polyethylene glycol 68389-53-7, Solvent Black 7 oleate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
     (high-d., low-viscosity ink for jet printing bar code labels)

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L36 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:365350 HCAPLUS  
 DOCUMENT NUMBER: 144:414427

TITLE: Energy ray-curable ink-jet  
ink compositions  
INVENTOR(S): Kito, Katsuyuki; Takao, Nagayuki  
PATENT ASSIGNEE(S): Hitachi Maxell, Ltd., Japan  
SOURCE: PCT Int. Appl., 31 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006041004	A1	20060420	WO 2005-JP18531	20051006
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2006131884	A	20060525	JP 2005-261135	20050908
PRIORITY APPLN. INFO.:			JP 2004-296538	A 20041008

AB The ink **compsns.**, having a **viscosity** of 3-35 mPa.s at 25°, contain coloring agents, monomers, and photopolymn. initiators, wherein 10-90% of an acrylamide derivative is contained relative to the total weight of the ink **compsns.**  
The ink **compsns.** have low **viscosity** without being diluted with a **diluent**, while exhibiting good storage stability and good pigment dispersibility when the coloring agents contained a pigment. The ink **compsns.** further have excellent stability in continuous discharge to a recording medium, and exhibit good curability even when the energy is low and the integrated amount of light is ≤150 mJ/cm<sup>2</sup>. The ink **compsns.** enable to obtain good print quality on a non-absorptive recording medium, and in particular, show excellent adhesion to a recording medium base.

CC 42-12 (Coatings, Inks, and Related Products)

ST storage discharge stability energy ray curable jet printing ink; pigmented curable acrylamide jet printing ink; nonabsorptive recording medium adhesion jet printing ink

IT Inks  
(jet-printing; UV-curable pigmented ink-jet inks with low viscosity, good storage and discharge stability)

IT 124221-07-4 661450-80-2 883743-10-0 883743-11-1  
 RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)

(UV-curable pigmented ink-jet inks  
 with low viscosity, good storage and discharge  
 stability)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN  
 THE RE FORMAT

L36 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:363748 HCAPLUS

DOCUMENT NUMBER: 144:414424

TITLE: Energy ray-curable ink-jet  
 ink compositions

INVENTOR(S): Kito, Katsuyuki; Takao, Nagayuki

PATENT ASSIGNEE(S): Hitachi Maxell, Ltd., Japan

SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006041003	A1	20060420	WO 2005-JP18530	20051006
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 2006131883	A	20060525	JP 2005-261134	20050908

PRIORITY APPLN. INFO.: JP 2004-296537 A 20041008

AB The ink compns., having a viscosity of 3-35 mPa.s at 25°, contain coloring agents, 30-90% of monofunctional monomers, 10-50% of multifunctional monomers, and 6-20% of photopolymer. initiators relative to the total weight of the ink compns. The ink compns. have a low viscosity without being diluted with a diluent or without being heated, while exhibiting good storage stability and good pigment dispersibility when the coloring agents contained a pigment. The ink compns. further have excellent stability in continuous discharge to a recording medium and sufficient curability at printing, and enable to obtain good print quality on a

non-absorptive recording medium. In particular, the ink compns. are excellent in adhesion to recording medium bases.

CC 42-12 (Coatings, Inks, and Related Products)

ST storage discharge stability energy ray curable jet

printing ink; pigmented curable jet

printing ink; nonabsorptive recording medium

adhesion jet printing ink

IT Inks

(jet-printing; UV-curable ink-

jet inks with low viscosity, good

storage and discharge stability)

IT 883743-44-0 883743-45-1 883743-46-2 883743-47-3 883743-48-4

RL: PRP (Properties); TEM (Technical or engineered material use);

USES (Uses)

(UV-curable ink-jet inks with low

viscosity, good storage and discharge stability)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L36 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:996235 HCAPLUS

DOCUMENT NUMBER: 141:429659

TITLE: Photocuring/thermosetting ink-jet composition and  
printed wiring board using same

INVENTOR(S): Kakinuma, Masahisa; Kusama, Masatoshi; Ushiki,  
Shigeru

PATENT ASSIGNEE(S): Taiyo Ink Manufacturing Co., Ltd., Japan

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004099272	A1	20041118	WO 2004-JP6029	20040507
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1624001	A1	20060208	EP 2004-731714	20040507
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1784432	A	20060607	CN 2004-80012609	



US 2006058412

A1

20060316

US 2005-269836

200405  
07200511  
09

PRIORITY APPLN. INFO.:

JP 2003-131742

A

200305  
09

WO 2004-JP6029

W

200405  
07

AB A photocuring/thermosetting **ink-jet composition** contains (A) a monomer having a (meth)acryloyl group and a thermosetting functional group in the mol., (B) a photoreactive **diluent** other than the component (A) having a weight-average mol. weight of not more than 700, and (C) a photopolymer. initiator, and has a **viscosity** of not more than 150 mPa·s at 25°. A solder resist pattern is directly drawn on a printed wiring board by an **ink-jet printer** using the above-mentioned **composition**, and the pattern is primarily cured by irradiation with an active energy beam and then further cured by heat.

IC ICM C08F220-10  
ICS C09D011-00; H05K003-28

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76

ST photocurable thermosetting **ink jet** solder resist  
**printed circuit board**

IT Printed circuit boards  
Solder resists  
(photocurable thermosetting **ink-jet composition** for **printed circuit board**)

IT 88-12-0, N-Vinyl-2-pyrrolidone, uses 88-12-0D, N-Vinyl-2-pyrrolidone, polymers 101-90-6, Resorcinol diglycidyl ether 101-90-6D, Resorcinol diglycidyl ether, polymers 2478-10-6, 4-Hydroxybutyl acrylate 3121-61-7, 2-Methoxyethyl acrylate 3524-68-3, Pentaerythritol triacrylate 3524-68-3D, Pentaerythritol triacrylate, polymers 3897-65-2, 3-Ethyl-3-(phenoxymethyl)oxetane 3897-65-2D, 3-Ethyl-3-(phenoxymethyl)oxetane, polymers 5888-33-5, Isobornyl acrylate 5888-33-5D, Isobornyl acrylate, polymers 13162-05-5, N-Vinylformamide 15625-89-5, Trimethylolpropane triacrylate 15625-89-5D, Trimethylolpropane triacrylate, polymers 22239-60-7, 22239-60-7D, polymers 24615-84-7 29570-58-9, Dipentaerythritol hexaacrylate 30674-80-7, 2-Methacryloyloxyethyl isocyanate 64630-63-3, Cyclomer A 200 107481-28-7, 1,9-Nonanediol diacrylate 137902-72-8, Nikalac MX 302 796113-80-9 796113-81-0 796113-82-1 796113-83-2 796113-84-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photocurable thermosetting **ink-jet composition** for **printed circuit board**)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L36 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:689862 HCAPLUS

DOCUMENT NUMBER: 142:136592  
TITLE: Absorption properties of coatings: a selected overview of absorption criteria derived from recent pore network modelling  
AUTHOR(S): Gane, P.  
CORPORATE SOURCE: Head of Fundamental Research, Omya AG, Oftringen, Switz.  
SOURCE: Journal of Dispersion Science and Technology (2004), 25(4), 389-408  
CODEN: JDTEDS; ISSN: 0193-2691  
PUBLISHER: Marcel Dekker, Inc.  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review. Absorption of fluids into porous media controls the printability characteristics of coated papers in respect to ink setting rate and phenomena such as wicking and bleeding. The dynamic of absorption is related to the runnability on printing presses. Pore structure, size distribution, and surface chemical are the parameters which can be used to design structures for optimal absorption. To achieve a working understanding it has been necessary to develop the theory of absorption to encompass the short timescale fast absorption occurring during wetting of the fluid ink onto the surface of the paper. The phenomena of fluid spread and absorption are studied and shown to depend on the observed pore size distribution rather than porosity alone. This finding calls into question the traditional acceptance of the Lucas-Washburn relationship for such porous networks as the hydraulic absorption radius determined from exptl. absorption rate measurements fails to follow the actual measured pore size trend. It is necessary to invoke the concept of a preferred pathway of absorption in which only selected groups within the finest connecting pores or throats of the network in combination with intermediate pore reservoirs contribute maximally to the transmission of fluid through the coating structure as porosity increases. By defining the pore size range involved in this mechanism using an inertial wetting term, found in the short time solution to the Bosanquet equation, it is possible for the first time to identify the connective structures responsible for the important time dependent absorption properties of coatings and their relationship to the ink tackification and/or setting rates for a range of printing ink solvents and diluents, including offset, rotogravure, flexog., and ink jet inks. Addnl., the differential chromatog. effect of coatings and associated binder systems results in further time dependent offset ink setting phenomena in which miscible ink oils of different natures sep. within the coating pores and between the pores and synthetic latex binders. In situ determination of the viscosity and solids content of an offset ink via static ink tack measurements allows the dynamic of ink setting to be studied on real coating systems. Combining these criteria, the necessary steps can be followed to design the coating pigment structures required for optimizing existing and future fluid-based printing technologies.

CC 42-0 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 37, 43

IT Inks  
(jet-printing; absorption of pore network modeling coatings)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:118609 HCAPLUS  
 DOCUMENT NUMBER: 138:172008  
 TITLE: Radiation curable inkjet  
 composition for forming 3-D models  
 INVENTOR(S): Mejiritski, Alexandre; Grinevich, Oleg V.;  
 Martin, Dustin B.; Neckers, Douglas C.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 6 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003032692	A1	20030213	US 2001-924911	200108 08
US 6586494	B2	20030701	US 2001-924911	200108 08

PRIORITY APPLN. INFO.: US 2001-924911

AB A radiation-curable inkjet composition for forming 3-D models or images comprises a semi-crystalline or crystalline, low-shrinkage, radiation-curable oligomeric material (e.g., Uvecoat 9010), a photoinitiator (e.g., Irgacure 819), and a diluent (e.g., SR 205). The inkjet composition has a viscosity of 10-50 cps at temperature 50°-140°.

IC ICM C08G002-00

INCL 522173000; X52-217.8

CC 42-11 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 74

ST radiation curable inkjet compn 3D image

IT Polyurethanes, uses  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic; preparation of radiation curable inkjet composition for forming 3-D models)

IT Inks  
 (jet-printing; preparation of radiation curable inkjet composition for forming 3-D models)

IT Catalysts  
 (photochem.; preparation of radiation curable inkjet composition for forming 3-D models)

IT Inks  
 (radiation-curable; preparation of radiation curable inkjet composition for forming 3-D models)

IT 109-16-0, SR 205 40220-08-4, SR 368 124452-51-3D, Cyclohexane dimethanol diacrylate, alkoxylated  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (diluent; preparation of radiation curable inkjet composition for forming 3-D models)

IT 162881-26-7, Irgacure 819

RL: CAT (Catalyst use); USES (Uses)  
(photoinitiator; preparation of radiation curable inkjet  
composition for forming 3-D models)

IT 496861-67-7P 496861-68-8P, 1,6-Hexanediol diacrylate-SR  
368-stearyl acrylate-Uvecoat 9010 copolymer 496924-24-4P, CD 582  
496924-35-7P, CD 582-Ebecryl 4833-SR 205-SR 368-Uvecoat 9010  
copolymer 496924-36-8P, Ebecryl 4833-RX 03739-SR-205-SR 368  
copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(preparation of radiation curable inkjet composition  
for forming 3-D models)

IT 151127-06-9, Ebecryl 4833 403480-29-5, Uvecoat 9010 496924-34-6,  
RX 03739

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical  
or engineered material use); USES (Uses)  
(preparation of radiation curable inkjet composition  
for forming 3-D models)

L36 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:117921 HCAPLUS

DOCUMENT NUMBER: 138:138953

TITLE: Solvent-free liquid pigment ink for  
ink-jet printing

INVENTOR(S): Jego, Elodie; Perisse, Denis; Cocagne, Pierre

PATENT ASSIGNEE(S): Armor, Fr.

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003011989	A1	20030213	WO 2002-FR2680	200207 26
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
FR 2828203	A1	20030207	FR 2001-10305	200108 01
FR 2828203	B1	20050729		
PRIORITY APPLN. INFO.:			FR 2001-10305	A 200108 01

AB The invention concerns a liquid pigment ink, free of aqueous or volatile

organic solvent, comprising a pigment suspended in a vehicle based on a first (meth)acrylic monomer or oligomer compound, UV-curable in the presence of a photoinitiator. The vehicle contains 70-85%  $\geq 1$  s UV-curable monomer or oligomer compound, compatible with the first compound, and of viscosity not higher than that of the latter (e.g., octyl acrylate-decyl acrylate mixture), which is added in proportions such that the final viscosity of the ink is about 20 mPa s at 15-35°. Said solvent-free ink is in particular designed for ink-jet printing.

IC ICM C09D011-10  
ICS C09D011-00  
CC 42-12 (Coatings, Inks, and Related Products)  
ST solvent free photocurable acrylic jet printing ink; octyl decyl acrylate diluent photocurable jet printing ink  
IT Polyurethanes, uses  
RL: TEM (Technical or engineered material use); USES (Uses) (acrylate-terminated; photocurable solvent-free liquid ink containing (meth)acrylic oligomers or monomers for ink-jet printing)  
IT Inks (jet-printing; photocurable solvent-free liquid ink containing (meth)acrylic oligomers or monomers for ink-jet printing)  
IT Inks (printing, photocurable; photocurable solvent-free liquid ink containing (meth)acrylic oligomers or monomers for ink-jet printing)  
IT 28961-43-5, Ethoxylated trimethylolpropane triacrylate 51728-26-8, Ethoxylated pentaerythritol tetraacrylate 60506-81-2, Dipentaerythritol pentaacrylate 294863-79-9, Photomer 4200 494790-28-2, Monocryl 903  
RL: TEM (Technical or engineered material use); USES (Uses) (photocurable solvent-free liquid ink containing (meth)acrylic oligomers or monomers for ink-jet printing)  
IT 2156-96-9, Decyl acrylate 2499-59-4, Octyl acrylate  
RL: TEM (Technical or engineered material use); USES (Uses) (reactive diluent; photocurable solvent-free liquid ink containing (meth)acrylic oligomers or monomers for ink-jet printing)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2002:368587 HCAPLUS  
DOCUMENT NUMBER: 136:387534  
TITLE: Radiation-curable ink-jet ink composition, production method, and printing method thereof with low viscosity  
INVENTOR(S): Ylitalo, Caroline M.; Severance, Richard L.; Thery, Ronald K.  
PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA  
SOURCE: PCT Int. Appl., 45 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002038687	A1	20020516	WO 2001-US42511	20011004
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6558753	B1	20030506	US 2000-711345	20001109
AU 2001096988	A5	20020521	AU 2001-96988	20011004
EP 1332188	A1	20030806	EP 2001-977907	20011004
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004522813	T	20040729	JP 2002-542009	20011004
EP 1642943	A2	20060405	EP 2005-22137	20011004
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 2003158283	A1	20030821	US 2002-293065	20021113
US 6730714	B2	20040504		
PRIORITY APPLN. INFO.:			US 2000-711345	A 20001109
			EP 2001-977907	A3 20011004
			WO 2001-US42511	W 20011004
AB Title method comprises the steps of (a) selecting a solvent component to incorporate into the <b>composition</b> , wherein the solvent component comprises solvent having a surface tension and wherein said solvent is selected for incorporation into the <b>composition</b> from information comprising a solvent characteristic indicative of the solvent surface tension, and (b) incorporating				

1-15 wt% of the solvent into a 10 composition comprising said solvent,  $\geq 1$  oligo/resins, and a radiation curable, reactive diluent having a surface tension, wherein the surface tension of the solvent is no more than about the surface tension of the radiation curable reactive diluent. The printing method comprises the steps of (a) providing the ink composition (b) ink jetting the ink compn . onto the substrate to form an ink jetted feature, and (c) while at least a portion of the solvent is still present in the ink jetted feature, exposing the ink jetted feature to an amount of curing energy under conditions effective to at least substantially cure the radiation curable component of the printed feature and to at least substantially dry the ink jetted feature. The inks with moderate amts. of solvent with low surface tension provide unique processability characteristics that allow inkjetted features to be formed and cured with excellent flow, adhesion, dot gain, compatibility, weather-resistant, and curing characteristics.

IC ICM C09D011-00

ICS C09D011-10

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

ST oligomer resin solvent radiation curable ink jet printing

IT Carbon black, uses

RL: MOA (Modifier or additive use); USES (Uses)

(LB 101, pigment; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(flow agent; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Inks

(jet-printing; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Coloring materials

Ink-jet printing

Interpenetrating polymer networks

Lubricants

(manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Polyesters, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Crosslinking

(photochem.; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT Polyurethanes, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyester-, acrylates; manufacture of radiation-curable ink-jet ink composition, production method, and

printing method)

IT Polyurethanes, uses  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyester-; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 147-14-8  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Cyan 249-1284, pigment; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 3089-17-6  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Magenta RT 343D, pigment; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 872613-79-1, C.I. Pigment Yellow 150  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Yellow Y 5688, pigment; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 9016-00-6, SF96-100 31900-57-9  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (flow agent; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 24980-41-4DP, Polycaprolactone, acrylate-terminated, reaction products with Vestanat TMDI and Tone 0305 25248-42-4DP, Polycaprolactone, acrylate-terminated, reaction products with Vestanat TMDI and Tone 0305 54735-63-6DP, Tone 0305, reaction products with Vestanat TMDI and polycaprolactone acrylate 101484-78-ODP, Tone M 100, reaction products with Vestanat TMDI 179987-35-ODP, Vestanat TMDI, reaction product with polycaprolactone acrylate 425670-91-3P 425670-95-7P 425686-51-7P 425686-55-1P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ink composition containing; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

IT 141-78-6, Ethyl Acetate, uses 84540-57-8, PM Acetate 99294-00-5, Exxate 700 99294-01-6, Exxate 600 116711-83-2, Exxate 800  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; manufacture of radiation-curable ink-jet ink composition, production method, and printing method)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 137 ibib abs hitstr hitind 1-5

L37 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:827565 HCAPLUS  
 DOCUMENT NUMBER: 137:339147  
 TITLE: Water-resistant inks, method and apparatus for ink-jet printing using the inks, and ink containers



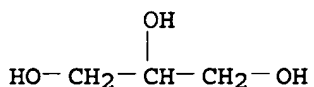
INVENTOR(S): Onishi, Yasuharu; Endo, Hiroyuki; Ueki, Hiroyuki  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002317133	A	20021031	JP 2001-119956	20010418
PRIORITY APPLN. INFO.:				JP 2001-119956
				20010418

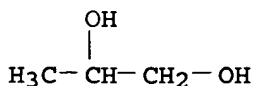
AB The inks composed of reactive dyes, organic solvents, and surfactants and those mixed with 5 parts Polyethylene Glycol 200 show author-defined color difference after jet-printing and immersion in water. Thus, an ink composition comprising Reactive Yellow 67 3, diethylene glyco 15, glycerin 10, and nonionic surfactants 1 part balanced with water showed surface tension ( $\gamma$ ) 0.2 dyne/cm, viscosity ( $\eta$ ) 3.0 cP, and pH 8.6, and 95.2 parts of which blended with balanced amount of Polyethylene Glycol 200 showed  $\gamma$  3.03 dyne/cm,  $\eta$  3.4 cP, and pH 8.7. The ink shows stable jetting and storage stability and gives images without bleeding.

IT 56-81-5, Glycerin, uses 57-55-6, Propylene glycol, uses 111-46-6, Diethylene glycol, uses 1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (water-resistant inks with good storage stability for ink -jet printing)

RN 56-81-5 HCAPLUS  
 CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 57-55-6 HCAPLUS  
 CN 1,2-Propanediol (8CI, 9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS  
 CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)

HO-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 1310-58-3 HCAPLUS  
CN Potassium hydroxide (K(OH)) (9CI) (CA INDEX NAME)

K-OH

RN 1310-73-2 HCAPLUS  
CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)

Na-OH

IC ICM C09D011-00  
ICS B41J002-01; B41M005-00  
CC 42-12 (Coatings, Inks, and Related Products)  
ST **ink jet printing** water resistance  
reactive dye; storage stability **jet printer**  
**ink** container  
IT Containers  
(for inks; water-resistant inks with good storage stability for  
**ink-jet printing**)  
IT **Inks**  
(**jet-printing**; water-resistant inks with good  
storage stability for **ink-jet**  
**printing**)  
IT Carboxylic acids, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered  
material use); USES (Uses)  
(salts; water-resistant inks with good storage stability for  
**ink-jet printing**)  
IT **Ink-jet printers**  
(water-resistant inks with good storage stability for **ink**  
**-jet printers**)  
IT **Ink-jet printing**  
Reactive dyes  
(water-resistant inks with good storage stability for **ink**  
**-jet printing**)  
IT Amines, uses  
Borates  
Carbonates, uses  
Hydroxides (inorganic)  
Phosphates, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered  
material use); USES (Uses)  
(water-resistant inks with good storage stability for **ink**  
**-jet printing**)  
IT Polyoxyalkylenes, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(water-resistant inks with good storage stability for **ink**  
**-jet printing**)  
IT 56-81-5, Glycerin, uses 57-55-6, Propylene  
glycol, uses 62-54-4, Calcium acetate 62-76-0, Sodium  
oxalate 75-04-7, Ethylamine, uses 100-71-0, 2-Ethylpyridine  
102-71-6, Triethanolamine, uses 107-21-1, Ethylene glycol

, uses 108-89-4, 4-Methylpyridine 109-06-8, 2-Methylpyridine 109-89-7, Diethylamine, uses 110-86-1, Pyridine, uses 111-42-2, Diethanolamine, uses 111-46-6, Diethylene glycol, uses 112-34-5, Diethylene glycol monobutyl ether 121-44-8, Triethylamine, uses 126-96-5, Sodium hydrogen diacetate 127-08-2, Potassium acetate 127-09-3, Sodium acetate 127-95-7, Potassium hydrogen oxalate 141-43-5, Monoethanolamine, uses 142-72-3, Magnesium acetate 143-22-6, Triethylene glycol monobutyl ether 144-55-8, Sodium hydrogen carbonate, uses 298-14-6 471-34-1, Calcium carbonate, uses 497-19-8, Sodium carbonate, uses 506-87-6, Ammonium carbonate 536-78-7, 3-Ethylpyridine 546-89-4, Lithium acetate 546-93-0, Magnesium carbonate 547-66-0, Magnesium oxalate 553-91-3, Lithium oxalate 554-13-2, Lithium carbonate 563-72-4 583-52-8, Potassium oxalate 584-08-7, Potassium carbonate 631-61-8, Ammonium acetate 694-56-4 1066-33-7, Ammonium hydrogen carbonate 1113-38-8, Ammonium oxalate 1186-49-8, Sodium hydrogen oxalate 1305-62-0, Calcium hydroxide, uses 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 1330-43-4, Sodium tetraborate 1332-77-0, Potassium tetraborate 1336-21-6, Ammonium hydroxide 1628-89-3, 2-Methoxypyridine 4251-29-0, Potassium hydrogen acetate 5006-97-3, Lithium hydrogen carbonate 5972-72-5, Ammonium hydrogen oxalate 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7722-76-1, Ammonium dihydrogen phosphate 7757-86-0, Magnesium hydrogen phosphate 7757-87-1 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7758-87-4, Tricalcium phosphate 7775-19-1, Sodium metaborate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 10361-65-6, Triammonium phosphate 10377-52-3, Trilithium phosphate 11128-29-3, Potassium pentaborate 12007-58-8, Ammonium boron oxide ((NH<sub>4</sub>)<sub>2</sub>B<sub>4</sub>O<sub>7</sub>) 12007-60-2, Lithium tetraborate 12007-89-5, Ammonium boron oxide ((NH<sub>4</sub>)B<sub>5</sub>O<sub>8</sub>) 12007-92-0, Sodium pentaborate 12008-41-2, Sodium octaborate (Na<sub>2</sub>B<sub>8</sub>O<sub>13</sub>) 12229-52-6, Potassium hexaborate (K<sub>4</sub>B<sub>6</sub>O<sub>11</sub>) 12229-54-8, Magnesium hexaborate (Mg<sub>2</sub>B<sub>6</sub>O<sub>11</sub>) 12229-55-9, Sodium hexaborate (Na<sub>4</sub>B<sub>6</sub>O<sub>11</sub>) 13092-66-5, Magnesium dihydrogen phosphate 13453-69-5, Lithium metaborate 13453-80-0, Lithium dihydrogen phosphate 13703-82-7, Magnesium metaborate 13709-94-9, Potassium metaborate 15302-96-2, N-Ethylpyridinium 25007-86-7 34370-18-8, Lithium pentaborate 52458-41-0, Ammonium metaborate 58567-85-4, Lithium hydrogen oxalate 70984-28-0, Ammonium octaborate 77617-77-7, Lithium hydrogen acetate 142261-32-3, Magnesium borate oxide (Mg<sub>3</sub>(BO<sub>2</sub>)<sub>4</sub>O) 473711-69-2, Magnesium borate oxide (Mg<sub>5</sub>(BO<sub>2</sub>)<sub>4</sub>O<sub>3</sub>)

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(water-resistant inks with good storage stability for ink -jet printing)

IT 290-87-9D, 1,3,5-Triazine, chlorinated derivs. 2831-66-5D, derivs. 12225-32-0, Reactive Black 17 12238-09-4, Reactive Blue 7 12239-43-9, Reactive Red 14 25322-68-3 473915-61-6, C.I. Reactive Yellow 67

RL: TEM (Technical or engineered material use); USES (Uses)  
(water-resistant inks with good storage stability for ink -jet printing)

DOCUMENT NUMBER: 137:202810  
 TITLE: Water-thinned ink-jet  
 printing ink  
 compositions with good discharge and  
 storage stability  
 INVENTOR(S): Onishi, Yasuharu; Endo, Hiroyuki; Ueki, Hiroyuki  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002256186	A	20020911	JP 2001-56952	200103 01
PRIORITY APPLN. INFO.:				200103 01

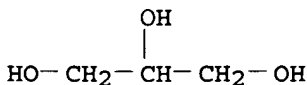
AB The **composition** comprises a colorant, an organic solvent and a **surfactant**, wherein the droplets in total pixel is arranged to two picture in a condition of 1 droplet amount 20 pL and resolution 720 dpi. The optical d. difference of the two pictures OD(A)/OD(B)  $\geq 1.05$ , wherein OD(A) = optical d. of the picture printed with the ink **composition** without NaOH and DO(B) = optical d. of the picture printed with the ink **composition** containing 0.1-5 parts NaOH (based on 100 parts ink **composition**). Thus, an ink **composition** with **surface tension** 30.4 dyne/cm, **viscosity** 3.0 cps and pH 9.1, comprising 100 parts (A) with **surface tension** 30.4 dyne/cm, **viscosity** 3.2 cps and pH 11.8, containing Reactive Yellow 67 3, polyethylene glycol 200 15, glycerol 10, nonionic **surfactant** 1 and ion-exchanged water balanced and 5 parts NaOH.

IT 56-81-5, Glycerol, uses 57-55-6, Propylene glycol, uses 111-46-6, Diethylene glycol, uses

RL: NUU (Other use, unclassified); USES (Uses)  
 (water-thinned ink-jet printing  
 ink compns. with good discharge and storage  
 stability)

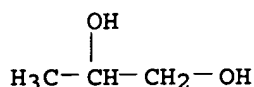
RN 56-81-5 HCAPLUS

CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)

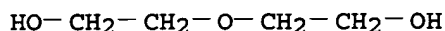


RN 57-55-6 HCAPLUS

CN 1,2-Propanediol (8CI, 9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS  
 CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC ICM C09D011-00  
 ICS B41J002-01; B41M005-00  
 CC 42-12 (Coatings, Inks, and Related Products)  
 ST **ink jet printing** water thinned;  
 discharge storage stability  
 IT **Inks**  
 (jet-printing, water-thinned; water-thinned  
**ink-jet printing ink**  
 compns. with good discharge and storage stability)  
 IT **Surfactants**  
 (nonionic; water-thinned **ink-jet**  
**printing ink compns.** with good  
 discharge and storage stability)  
 IT **Ink-jet printers**  
**Ink-jet printing**  
 Pigments, nonbiological  
 (water-thinned **ink-jet printing**  
**ink compns.** with good discharge and storage  
 stability)  
 IT Polyoxyalkylenes, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (water-thinned **ink-jet printing**  
**ink compns.** with good discharge and storage  
 stability)  
 IT 56-81-5, Glycerol, uses 57-55-6, Propylene  
 glycol, uses 107-21-1, Ethylene glycol, uses  
 111-46-6, Diethylene glycol, uses 112-34-5,  
 Diethylene glycol monobutyl ether 143-22-6, Triethylene  
 glycol monobutyl ether 25322-68-3  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (water-thinned **ink-jet printing**  
**ink compns.** with good discharge and storage  
 stability)  
 IT 4399-55-7, C.I. Direct Blue 71 12222-04-7, C.I. Direct Blue 199  
 12225-29-5, C.I. Reactive Black 11 12238-09-4, C.I. Reactive Blue  
 7 12239-43-9, C.I. Reactive Red 14 12270-94-9, C.I. Reactive  
 Yellow 47 54804-85-2, C.I. Direct Black 154  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (water-thinned **ink-jet printing**  
**ink compns.** with good discharge and storage  
 stability)

L37 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1998:242053 HCAPLUS  
 DOCUMENT NUMBER: 128:322972  
 TITLE: Aqueous **ink-jet inks**  
 with low temperature dependence

INVENTOR(S): Ueda, Takamasa; Natsuhara, Toshiya; Asano, Masami; Yasutomi, Hideo  
 PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Peop. Rep. China  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10101975	A	19980421	JP 1996-260605	19961001
JP 3541579	B2	20040714		
US 5910211	A	19990608	US 1997-939711	19970929
PRIORITY APPLN. INFO.:			JP 1996-260605	A 19961001
			JP 1996-260608	A 19961001
			JP 1996-260615	A 19961001

AB Title inks contain 0.01-2% NaOH, NaHCO<sub>3</sub>, and/or Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> and 0.01-5% ethoxylated or propoxylated acetylene glycols [I; (HOQ1)R<sub>1</sub>R<sub>3</sub>CC::CCR<sub>2</sub>R<sub>4</sub>(Q<sub>2</sub>OH)] with R<sub>1</sub>-R<sub>4</sub> = low alkyl and Q<sub>1</sub>, Q<sub>2</sub> = oxyethylene or oxypropylene. An aqueous ink containing 0.7% Olfine E 1010 (I, R<sub>1</sub>, R<sub>2</sub> = iso-Bu, R<sub>3</sub>, R<sub>4</sub> = Me, Q<sub>1</sub>, Q<sub>2</sub> = oxyethylene) and 0.2% 1:19 NaOH/NaHCO<sub>3</sub> mixture showed both the viscosity and surface tension change of <5% between 10° and 35°, good anticlogging (35°, 85% relative humidity, 100 pieces of paper), and gave dots with diameter deviation ±3.0 μm, vs. >10%, poor, and ±5.2 μm, for an Olfine E 1010-free similar ink.

IT 1310-73-2, Sodium hydroxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (ethoxylate or propoxylated acetylene glycol-containing aqueous ink-jet inks with low temperature dependence and dot uniformity)

RN 1310-73-2 HCAPLUS

CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)

Na-OH

IC ICM C09D011-02

ICS B41J002-01; C09D011-10

CC 42-12 (Coatings, Inks, and Related Products)

ST temp independence ink alkoxylated acetylene glycol; ink dot uniformity alkoxylated acetylene glycol; storage

stability ink alkoxylated acetylene glycol; jet  
printing ink alkoxylated acetylene glycol

IT **Surfactants**

(ethoxylate or propoxylated acetylene glycol-containing aqueous  
ink-jet inks with low temperature  
dependence and dot uniformity)

IT **Inks**

(jet-printing; ethoxylate or propoxylated  
acetylene glycol-containing aqueous ink-jet  
inks with low temperature dependence and dot uniformity)

IT 144-55-8, Sodium hydrogencarbonate, uses 1303-96-4, Borax  
1310-73-2, Sodium hydroxide, uses

RL: MOA (Modifier or additive use); USES (Uses)

(ethoxylate or propoxylated acetylene glycol-containing aqueous  
ink-jet inks with low temperature  
dependence and dot uniformity)

IT 9014-85-1

RL: MOA (Modifier or additive use); USES (Uses)

(surfactant, Olfine E 1010; ethoxylate or propoxylated  
acetylene glycol-containing aqueous ink-jet  
inks with low temperature dependence and dot uniformity)

L37 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:551672 HCAPLUS

DOCUMENT NUMBER: 109:151672

TITLE: Water-thinned jet-printing

inks containing polyallylalkylamines

INVENTOR(S): Ariga, Tamotsu; Shimada, Masaru; Murakami,  
Kakuji; Kamimura, Hiroyuki; Nagai, Kiyofumi

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

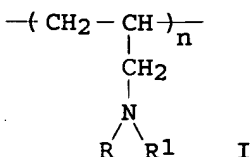
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 63063764	A	19880322	JP 1986-206841	198609 04
JP 07091494	B	19951004		
PRIORITY APPLN. INFO.:			JP 1986-206841	198609 04

GI



AB The title inks, anticlogging, storage-stable, and producing prints having good light and water resistance, comprise polyalkylamines I (R = hydroxyalkyl; R1 = H, hydroxyalkyl; n = 50-130) or their compds., dyes, and wetting agents. A composition containing C.I. Acid Red 254 3.0, I (R = R1 = C2H4OH) 1.8, diethylene glycol 22.5, glycerin 7.5, Deltop 33 (antifungal agent) 0.3, and H2O 64.9% with pH adjusted at 10.5-11.0 by NaOH showed no change in viscosity, surface tension, and elec. conductivity when stored at -20, 4, 20, 50, or 70° for 3 mo and produced clear prints having good light and water resistance, without clogging the print head.

IC ICM C09D011-00

ICS C09D011-00; C09D011-02

CC 42-12 (Coatings, Inks, and Related Products)

ST jet printing ink water thinned;

anticlogging jet printing ink; storage

stability jet printing ink; water

resistance jet printing ink; light

resistance jet printing ink;

polyallylalkylamine acid dye printing ink; allylalkylamine polymer

acid dye ink

IT Dyes

(acid, jet-printing inks containing

polyallylalkylamines and, anticlogging, storage-stable,

water-thinned)

IT Alcohols, polymers

RL: USES (Uses)

(allylamino, polymers, jet-printing

inks containing acid azo dyes and, anticlogging,

storage-stable, water-thinned)

IT Inks

(jet-printing, anticlogging, storage-stable,

water-thinned, containing dyes and polyallylalkylamines)

IT 116738-26-2 116738-28-4 116738-30-8 116738-32-0 116738-33-1

116738-35-3 116738-37-5 116738-38-6

RL: USES (Uses)

(jet-printing inks containing dyes and,

anticlogging, storage-stable, water-thinned)

IT 6441-93-6, C.I. Acid Red 35 12270-00-7, C.I. Acid Red 227

18472-87-2, C.I. Acid Red 92 27360-85-6, C.I. Acid Blue 249

81613-15-2 89591-44-6, C.I. Acid Red 254 105985-32-8

116854-07-0

RL: USES (Uses)

(jet-printing inks containing

polyallylalkylamines and, anticlogging, storage-stable,

water-thinned)

L37 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:444952 HCAPLUS

DOCUMENT NUMBER: 95:44952

TITLE: Liquid ink for a printer

INVENTOR(S): Owatari, Akio; Yamada, Yuki

PATENT ASSIGNEE(S): Shinshu Seiki K. K., Japan

SOURCE: Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English



FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 27709	A1	19810429	EP 1980-303601	198010 13
EP 27709	B1	19840704		
R: CH, DE, FR, GB, IT, NL, SE				
JP 56057862	A	19810520	JP 1979-133824	197910 17
JP 63002996	B	19880121		
US 4352691	A	19821005	US 1980-197731	198010 16
PRIORITY APPLN. INFO.:			JP 1979-133824	A 197910 17

AB Aqueous **jet-printing inks** with pH 12-13.5 contain water-soluble dyes  $\leq 10$ , strong bases (e.g. NaOH or KOH) 0.001-15, and **wetting agents** 5-45 parts. Thus, an ink containing Kayaku Direct Special Black XA 2, glycerol 5, triethylene glycol 10, 10N KOH 2, Na dehydroacetate [4418-26-2] 0.1 and H<sub>2</sub>O 80.9 parts has **viscosity** 1.9 cP at 20°, **surface tension** 52 mN/m at 20° and pH 12.4. With a **jet printer** with a 40- $\mu$  orifice, this ink gives quality prints drying in  $\leq 5$  s on recording paper. Exposing the jet to air for 144 h after 1 h use caused no clogging.

IC C09D011-02

CC 42-12 (Coatings, Inks, and Related Products)

ST **jet printing ink**

IT **Inks**

(**jet-printing**, nonclogging,  
**formulation** of aqueous)

IT 4418-26-2

RL: USES (Uses)

(inks containing, **jet-printing**)

=>

=> d 138 ibib abs hitstr hitind 1-19

L38 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:530377 HCAPLUS  
 DOCUMENT NUMBER: 141:73106  
 TITLE: Production method of conductive materials for  
 ink **compositions**  
 INVENTOR(S): Arita, Hitoshi; Kojima, Akio  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 56 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004185952	A	20040702	JP 2002-350812	200212 03
<--				
PRIORITY APPLN. INFO.:			JP 2002-350812	200212 03
<--				

AB Title method comprises (i) a step of dissoln. of elec. conductive materials in supercrit. fluids or subcrit. fluids and (ii) a step of crystal precipitation. Thus, gold fine particles with average particle diameter 6 nm was dissolved in a supercrit. fluid of carbon dioxide, 2 g 25% carboxy-terminated polyoxyalkylene ether **surfactant** solution and 35 mL 1,3-dimethyl-2-imidazolidinone were added therein and evacuated carbon dioxide to give a **dispersant** containing conductive material, 42 g of which was mixed with styrene-acrylic copolymer **dispersant** 5, carboxy-terminated polyoxyalkylene ether **surfactant** 2, glycerol 18, 1,3-dimethyl-2-imidazolidinone 35, N-methyl-2-pyrrolidone 11, and 1,4-butanediol 24% to give a conductive ink **composition** with **viscosity** 9.51 mPa-s, **surface tension** 42.6 mN/m, water contact angle 38.5°, and good dischargeability, patterning property, and film foamability.

IC ICM H01B013-00  
 ICS B41J002-01; C09D011-00; H01B001-20; H01L021-60

CC 42-12 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 76

ST conductive material ink **compn** prepn; gold particle supercrit fluid dissoln ink **compn**

IT Solders  
 (alloys, conductive; production method of conductive materials in supercrit. fluids for ink **compns.**)

IT **Surfactants**  
 (anionic; production method of conductive materials in supercrit. fluids for ink **compns.**)

IT Alloys, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (conductive; production method of conductive materials in supercrit. fluids for ink **compns.**)

IT Inks  
 (elec. conductive; production method of conductive materials in

- supercrit. fluids for ink **compns.**)
- IT Polyoxyalkylenes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (ethers, anionic group-terminated, **surfactants**; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT **Surfactants**  
 (fluorosurfactants; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT Rosin  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (hydrogenated, plastic ink **compns.**; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT Electric conductors  
 (inks; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT **Inks**  
 (**jet-printing**, anticlogging; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT Acrylic polymers, uses  
 Epoxy resins, uses  
 Isoprene rubber, uses  
 Polyester rubber  
 Polyimides, uses  
 Rosin  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (plastic ink **compns.**; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT Electric conductors  
 Supercritical fluids  
**Surfactants**  
 (production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT Alcohols, uses  
 Aromatic compounds  
 Ketones, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (supercrit. fluids; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT 7440-44-0, Carbon, uses  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (conductive; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT 9003-31-0  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (isoprene rubber, plastic ink **compns.**; production method of conductive materials in supercrit. fluids for ink **compns.**)
- IT 9002-86-2, Polyvinylchloride 25014-41-9, Polyacrylonitrile  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (plastic ink **composition**; production method of conductive materials in supercrit. fluids for ink **compns.**)

- IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-74-6, Indium, uses  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (production method of conductive materials in supercrit. fluids for ink **comps.**)
- IT 62-53-3, Aniline, uses 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, 2-Propanol, uses 67-64-1, Acetone, uses 71-23-8, 1-Propanol, uses 71-43-2, Benzene, uses 78-93-3, MEK, uses 93-58-3, Methyl benzoate 95-47-6, o-Xylene, uses 95-48-7, o-Cresol, uses 95-50-1, o-Dichlorobenzene 98-82-8, Isopropylbenzene 98-86-2, Acetophenone, uses 98-95-3, Nitrobenzene, uses 100-41-4, Ethylbenzene, uses 100-47-0, Benzonitrile, uses 100-51-6, Benzylalcohol, uses 100-66-3, Anisole, uses 106-42-3, p-Xylene, uses 106-44-5, p-Cresol, uses 106-46-7, p-Dichlorobenzene 108-38-3, m-Xylene, uses 108-39-4, m-Cresol, uses 108-67-8, 1,3,5-Trimethylbenzene, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 108-95-2, Phenol, uses 124-38-9, Carbon dioxide, uses 541-73-1, m-Dichlorobenzene  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (supercrit. fluid; production method of conductive materials in supercrit. fluids for ink **comps.**)
- IT 126-86-3 9003-11-6, Ethylene oxide-propylene oxide copolymer 9014-85-1 26027-38-3, Polyethylene glycol mono p-nonylphenyl ether 36533-27-4, Polyethylene glycol mono p-decylphenyl ether 56388-96-6 162215-93-2 168765-46-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (surfactant; production method of conductive materials in supercrit. fluids for ink **comps.**)

L38 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:139309 HCAPLUS

DOCUMENT NUMBER: 140:183325

TITLE: Ink **compositions** with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet and image formation method

INVENTOR(S): Kondo, Ai

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004051881	A	20040219	JP 2002-213862	20020723

PRIORITY APPLN. INFO.: JP 2002-213862

20020723

OTHER SOURCE(S): MARPAT 140:183325

AB Title **comps.** with surface tension at

25° 20-60 mN/m and viscosity 6-200 mPa-s comprise polymerizable compds., photoinitiators, colorants, and surfactants. Thus, an ink set comprising pigment, pigment dispersant, phenoxypolyethylene glycol acrylate, reactive surfactant, Kayarad DPCA, Viscoat 335HP, Light Acrylate PO-A, and Irgacure 369 was used for an ink-jet printer and irradiated with a mercury lamp, showing good continuous dischargeability, ink dispersion stability, image quality, and good adhesion.

- IC ICM C09D011-00  
ICS B41J002-01; B41M005-00
- CC 42-12 (Coatings, Inks, and Related Products)
- ST ink compn dischargeability pigment dispersibility image quality adhesion; acrylic polyoxyalkylene pigment ink compn
- IT Carbon black, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Pigment Black 7, pigments; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Polyoxyalkylenes, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic, fluorine-containing; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Polyoxyalkylenes, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(acrylic, optionally pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Fluoropolymers, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic-polyoxyalkylene-; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Polyelectrolytes  
(anionic, pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Surfactants  
(anionic; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Polyelectrolytes  
(cationic, pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Fatty acids, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(esters, polymeric, pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)
- IT Surfactants  
(fluorosurfactants; ink compns. with good dischargeability, pigment dispersibility, image quality, and

adhesion for ink-jet)

IT Coloring materials  
 Dispersing agents  
 Pigments, nonbiological  
 Surfactants  
 (ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Inks  
 (jet-printing, anticlogging, storage-stable; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Surfactants  
 (nonionic; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Acrylic polymers, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Surfactants  
 (polymerizable; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Acrylic polymers, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (polyoxyalkylene-, pigment dispersants; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT Inks  
 (radiation-curable; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT 658488-88-1P 658488-98-3P 658489-04-4P 658489-17-9P  
 658489-26-0P 658489-32-8P 658489-39-5P 658489-45-3P  
 658489-52-2P 658489-57-7P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT 86753-78-8, Solspers 5000 86753-81-3, Solspers 17000  
 153928-45-1 286956-86-3, Solspers 24000  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (pigment dispersant; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT 147-14-8, Pigment Blue 15:3 1047-16-1, Pigment violet 19  
 5580-57-4, Pigment Yellow 93 13463-67-7, Titanium oxide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pigment; ink compns. with good dischargeability, pigment dispersibility, image quality, and adhesion for ink-jet)

IT 106392-12-5, Ethylene oxide-propylene oxide block copolymer  
 691397-13-4  
 RL: MOA (Modifier or additive use); USES (Uses)

L38 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

DOCUMENT NUMBER: 139:262352

INVENTOR(S): Furuya, Takahiro; Takao, Nagayuki

PATENT ASSIGNEE(S): Hitachi Maxell Ltd., Japan:

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

**PATENT INFORMATION:**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003268266	A	20030925	JP 2002-67872	200203 13
			<-->	
JP 3718478	B2	20051124		
JP 2005015815	A	20050120	JP 2004-303182	200410 18
			<-->	
RITY APPLN. INFO.:			JP 2002-67872	A3  200203 13

AB Title compns. contain major solvents having surface tension of  $\geq 25$  mN/m at  $20^\circ$ , viscosity of 1-20 cP, vapor pressure of  $\leq 0.2$  h-Pa, and b.p. of  $\geq 150^\circ$ . An ink containing a pigment, PME 400-containing acrylic polymer (dispersant), and ethylene glycol mono-Me ester mono-Bu ether gave prints with good fixability, no smudges after soaking in water for 1 h, and no cock ring.

IC ICM C09D011-00

ICS B41J002-01; B41M005-00

CC 42-12 (Coatings, Inks, and Related Products)

ST water resistance fixability ink alkylene glycol ether  
ester solvent; cock ring resistance ink alkylene glycol  
ether ester solvent

IT Polyoxyalkylenes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(acrylic, dispersant; ink-jet

inks containing alkylene glycol ether esters or diesters with sp. properties as solvents for water and cock-ring resistance)

IT Glycols, uses

RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)

(esters; ink-jet inks containing

alkylene glycol ether esters or diesters with sp. properties as solvents for water and cock-ring resistance)

IT Inks  
(jet-printing; ink-jet  
inks containing alkylene glycol ether esters or  
diesters with sp. properties as solvents for water and cock-ring  
resistance)

IT Acrylic polymers, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(polyoxyalkylene-, dispersant; ink-  
jet inks containing alkylene glycol ether  
esters or diesters with sp. properties as solvents for water and  
cock-ring resistance)

IT 93492-69-4  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dispersant; ink-jet inks  
containing alkylene glycol ether esters or diesters with  
sp. properties as solvents for water and cock-ring resistance)

IT 111-21-7, Triethylene glycol diacetate 112-07-2,  
Ethylene glycol monobutyl ether acetate 112-15-2,  
Diethylene glycol monoethyl ether acetate 124-17-4,  
Diethylene glycol monobutyl ether acetate 26074-90-8  
71648-22-1 142309-22-6  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(ink-jet inks containing alkylene  
glycol ether esters or diesters with sp. properties as  
solvents for water and cock-ring resistance)

L38 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:376948 HCAPLUS  
DOCUMENT NUMBER: 138:386968  
TITLE: Ink formulations and uses for printing  
contact lenses  
INVENTOR(S): Tucker, Robert Carey; Corti, Sandra  
PATENT ASSIGNEE(S): Novartis AG, Switz.; Novartis Pharma GmbH  
SOURCE: PCT Int. Appl., 45 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003040242	A2	20030515	WO 2002-EP12402	20021106
<--				
WO 2003040242	A3	20030904		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LT, LU, LV, MA, MD, MK, MN, MX, NO, NZ, OM, PH, PL, PT, RO, RU, SE, SG, SI, SK, TJ, TM, TN, TR, TT, UA, US, UZ, VC, VN, YU, ZA, ZW				
RW: AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
US 2003119943	A1	20030626	US 2002-287730	20021104



CA 2461379 A1 20030515 CA 2002-2461379 200211  
06

EP 1448726 A2 20040825 EP 2002-787582 200211  
06

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
JP 2005508432 T: 20050331 JP 2003-542284 200211  
06

PRIORITY APPLN. INFO.: US 2001-348257P P 200111  
07

WO 2002-EP12402 W 200211  
06

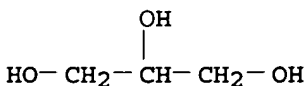
AB A chemical ink comprises a solvent, a binder polymer (e.g. polyvinyl alc.), a colorant, and optionally a crosslinker. The ink has  $\geq 1$  of the following characteristics: a **viscosity** .ltorsim.50 cP, **surface tension** .apprx.20-60 mN/m, particle size .ltorsim.5  $\mu\text{m}$ , prolonged stability, an appropriate color level (visible by eye), uniform drop formation, jet stability, good adhesion to contact lenses, good transfer from a mold to a lens made in the mold, and stability of ink in ink-jet nozzles. The ink is useful for ink-jet printing of a high-quality color image on a contact lens or a mold so as to produce a colored contact lens. **Surfactants** and humectants provide control over **surface tension** and nozzle clogging.

IT 56-81-5, Glycerol, uses 111-46-6, Diethylene glycol, uses

RL: TEM (Technical or engineered material use); USES (Uses) (humectant; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

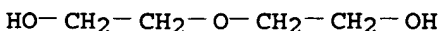
RN 56-81-5 HCAPLUS

CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS

CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC ICM C09D

CC 42-12 (Coatings, Inks, and Related Products)

ST jet printing ink color image contact lens

IT Charcoal  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (bone, C.I. Pigment Black 9; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT Contact lenses  
 Intraocular lenses  
 (ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT Carbon black, uses  
 Polyamides, uses  
 Polyesters, uses  
 Polyureas  
 Polyurethanes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT Inks  
 (jet-printing; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 482-89-3, D&C Blue Number 6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (D&C Blue Number 6; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 147-14-8, Phthalocyanine blue  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Permajet Blue B 2G; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 12225-06-8, Pigment Red 176  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Pigment Red 176; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 96-05-9, Allyl methacrylate 97-90-5, Ethylene glycol dimethacrylate 101-68-8, Bis(4,4'-isocyanatophenyl)methane 584-84-9, 2,4-Toluene diisocyanate 822-06-0, Hexamethylene diisocyanate 999-55-3, Allyl acrylate 1070-70-8, 1,4-Butanediol diacrylate 1188-09-6, 1,3-Propanediol dimethacrylate 2082-81-7, 1,4-Butanediol dimethacrylate 2274-11-5, Ethylene glycol diacrylate 2358-84-1, Diethylene glycol dimethacrylate 6606-59-3, 1,6-Hexanediol dimethacrylate 26570-48-9, Polyethylene glycol diacrylate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (crosslinker; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 56-81-5, Glycerol, uses 107-21-1, Ethylene glycol, uses 111-46-6, Diethylene glycol, uses 6228-25-7, 1,3-Dioxane-5,5-dimethanol  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (humectant; ink **formulations** containing binder polyvinyl alc. (hydrogel) and colorant for printing contact lenses or lens molds)

IT 81-48-1, D&C Violet Number 2 81-77-6, Pigment Blue 60 128-80-3, D&C Green Number 6 574-93-6, C.I. Pigment Blue 16 980-26-7, Pigment Red 122 1047-16-1, Pigment Violet 19 1308-38-9, Chromium sesquioxide, uses 1325-16-2, C.I. Pigment Red 60 1328-53-6, Phthalocyanine green 1339-82-8, C.I. Pigment Black 8 1344-37-2, Pigment Yellow 34 1345-16-0, Cobalt blue 2390-63-8, C.I. Basic Violet 11 2512-29-0, Pigment Yellow 1 2814-77-9, Pigment Red 4 3089-17-6, Pigment Red 202 4216-01-7, Pigment Yellow 108 5280-80-8, Pigment Yellow 95 5567-15-7, Pigment Yellow 83 5590-18-1, Pigment Yellow 110 6410-38-4, C.I. Pigment Red 9 6486-23-3, Pigment Yellow 3 6528-34-3, C.I. Pigment Yellow 65 6985-95-1, C.I. Pigment Red 171 7782-42-5, Pigment Black 10, uses 8007-18-9, Pigment Yellow 53 8046-59-1, C.I. Pigment Blue 33 8048-07-5, C.I. Pigment Yellow 35 12218-93-8, C.I. Acid Black 19 12225-18-2, Pigment Yellow 97 12227-89-3, Iron oxide black 12240-15-2, Pigment Blue 27 13007-86-8, Pigment Black 1 13463-67-7, Titania, uses 13782-01-9, C.I. Pigment Yellow 40 14059-33-7, Pigment Yellow 184 14295-43-3, Pigment Red 88 29204-84-0, Pigment Yellow 153 29920-31-8, Pigment Yellow 120 30125-47-4, Pigment Yellow 138 31837-42-0, C. I. Pigment Yellow 151 35636-63-6, Pigment Yellow 175 36888-99-0, Pigment Yellow 139 57455-37-5, Pigment Blue 29 67075-37-0, Pigment Black 31 68134-22-5, Pigment Yellow 154 68186-87-8, Pigment Blue 72 68187-11-1, Pigment Blue 36 68187-40-6, C.I. Pigment Blue 73 68412-74-8, Pigment Blue 74 68859-25-6, Pigment Yellow 37 71819-79-9, Pigment Violet 42 83712-59-8, Pigment Blue 35 88949-33-1, Pigment Red 264 91315-44-5, Pigment White 4 104074-25-1, Pigment Red 83 153640-87-0, Pigment Blue 17 159073-29-7, Nelfilcon 205132-29-2, Bayscript Cyan BG 215247-95-3, Carbazole violet 872613-79-1, C. I. Pigment Yellow 150

RL: TEM (Technical or engineered material use); USES (Uses)  
(ink **formulations** containing binder polyvinyl alc.  
(hydrogel) and colorant for printing contact lenses or lens molds)

IT 524848-52-0, Ethylene glycol dimethacrylate-2-ethoxyethyl methacrylate-2-hydroxyethyl methacrylate-methacrylic acid copolymer  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(lens; ink **formulations** containing binder polyvinyl alc.  
(hydrogel) and colorant for printing contact lenses or lens molds)

IT 9003-07-0, Polypropylene  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(mold; ink **formulations** containing binder polyvinyl alc.  
(hydrogel) and colorant for printing contact lenses or lens molds)

IT 9014-85-1, Surfynol 420  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**surfactant** for foam and **surface**  
**tension** control; ink **formulations** containing binder  
polyvinyl alc. (hydrogel) and colorant for printing contact  
lenses or lens molds)

IT 126-86-3, Surfynol 104 106392-12-5, Pluronic  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**surfactant**; ink **formulations** containing binder  
polyvinyl alc. (hydrogel) and colorant for printing contact  
lenses or lens molds)

DOCUMENT NUMBER: 138:108395  
 TITLE: Water-thinned pigment-based ink-jet ink compositions  
 INVENTOR(S): Ito, Kazunori; Morikawa, Yoshiyuki  
 PATENT ASSIGNEE(S): Sakata Inx Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003020427	A	20030124	JP 2001-206989	20010706

PRIORITY APPLN. INFO.: JP 2001-206989  
 20010706

AB The compns. (surface tension 30-55 mN/m, viscosity 1.5-5.0 mPa-s) comprise microdispersions prepared by jetting liquid mixts. containing pigments, aqueous media, and water-soluble resin binders through a linear orifice at a flow rate of 100-1000 m/s into liquid mixts. placed in a linear hollow component having a diameter larger than that of the orifice in a high-pressure emulsifier. Thus, a water-thinned ink-jet ink composition containing a base ink prepared by dispersing Printex 80 (C black) in an aqueous binder solution containing methacrylic acid-stearyl methacrylate-benzyl methacrylate copolymer triethylenediamine salt, glycerin, and BuOH with a high-pressure emulsifier showed surface tension 33 mN/m, viscosity change ≤10% and no precipitation after 1-mo storage at 60°, narrow particle size distribution, good discharge stability, and good print quality.

IC ICM C09D011-00

ICS B41J002-01; B41M005-00

CC 42-12 (Coatings, Inks, and Related Products)

ST water thinned ink jet pigment dispersion; dispersion stability ink jet polymethacrylate binder

IT Carbon black, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
 (Printex 80; water-thinned pigment-based ink-jet ink compns. with good dispersion stability and print quality)

IT Amides, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (fatty, wetting solvents; water-thinned pigment-based ink-jet ink compns. with good dispersion stability and print quality)

IT Inks

(jet-printing, water-thinned; water-thinned pigment-based ink-jet ink compns. with good dispersion stability and print quality)

IT Particle size distribution

Pigments, nonbiological  
Solvents

(water-thinned pigment-based **ink-jet**  
**ink compns.** with good dispersion stability and  
print quality)

IT **Glycols**, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered  
material use); USES (Uses)

(wetting solvents; water-thinned pigment-based **ink-**  
**jet ink compns.** with good dispersion  
stability and print quality)

IT 405233-93-4P, Benzyl methacrylate-methacrylic acid-stearyl  
methacrylate copolymer triethylenediamine salt 486998-59-8P,  
Monobutyl maleate-styrene copolymer triethylenediamine salt  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)

(water-thinned pigment-based **ink-jet**  
**ink compns.** with good dispersion stability and  
print quality)

IT 26762-67-4, Octanediol 52794-79-3, Isostearic acid diethanolamide  
RL: MOA (Modifier or additive use); TEM (Technical or engineered  
material use); USES (Uses)

(water-thinned pigment-based **ink-jet**  
**ink compns.** with good dispersion stability and  
print quality)

IT 147-14-8, Lionol Blue FG 7330

RL: TEM (Technical or engineered material use); USES (Uses)

(water-thinned pigment-based **ink-jet**  
**ink compns.** with good dispersion stability and  
print quality)

L38 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:36590 HCAPLUS

DOCUMENT NUMBER: 138:74862

TITLE: Aqueous **ink compositions** and  
**jet-printing inks**

INVENTOR(S): Kusakada, Shigeru

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003012979	A	20030115	JP 2001-203096	200107 04

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PRIORITY APPLN. INFO.: JP 2001-203096

200107  
04

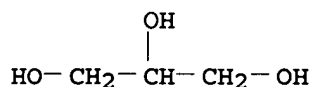
<--

OTHER SOURCE(S): MARPAT 138:74862

AB Inks contain water-soluble dyes, **wetting agents**,  
quaternary phosphonium nitrate salts and elec. conductivity 5.0-20.0 mS/cm,  
**surface tension** >30 mN/m, and **viscosity**

<3.0 mPa·s. Thus, an ink contained Direct Black 168 4, diethylene glycol 15, glycerin 5, trimethyl-2-hydroxyethyl phosphonium nitrate 1.5%, and H<sub>2</sub>O.

IT 56-81-5, Glycerin, uses 111-46-6, Diethylene glycol, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (wetting agents; jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 RN 56-81-5 HCAPLUS  
 CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS  
 CN Ethanol, 2',2'-oxybis- (9CI) (CA INDEX NAME)



IC ICM C09D011-00  
 ICS B41J002-01; B41M005-00  
 CC 42-12 (Coatings, Inks, and Related Products)  
 ST jet printing ink  
 trimethylhydroxyethylphosphonium nitrate pigment; wetting agent pigment jet printing ink  
 IT Dyes  
 Electric conductivity  
 Surface tension  
 Viscosity  
 Wetting agents  
 (jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 IT Phosphonium compounds  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 IT Inks  
 (jet-printing; jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 IT 6416-66-6, Acid Red 249  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Acid Red 249; jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 IT 85631-88-5, Direct Black 168  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Direct Black 168; jet-printing inks containing quaternary phosphonium nitrates and dyes and wetting agents)  
 IT 13262-37-8, Tetrabutylphosphonium nitrate 480429-88-7  
 RL: MOA (Modifier or additive use); USES (Uses)

(jet-printing inks containing  
quaternary phosphonium nitrates and dyes and wetting  
agents)

IT 56-81-5, Glycerin, uses 111-46-6, Diethylene  
glycol, uses 112-27-6, Triethylene glycol  
RL: MOA (Modifier or additive use); USES (Uses)  
(wetting agents; jet-  
printing inks containing quaternary phosphonium  
nitrates and dyes and wetting agents)

L38 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:727271 HCAPLUS

DOCUMENT NUMBER: 137:234186

TITLE: Ink compositions for ink  
jet recording and ink  
jet recording method

INVENTOR(S): Nakaya, Hiroaki; Kamoto, Takanori; Motoyama,  
Kiyoto; Fujii, Ichiro; Nakamura, Masashi

PATENT ASSIGNEE(S): Sharp Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002275395	A	20020925	JP 2001-74580	200103 15

PRIORITY APPLN. INFO.:

JP 2001-74580

200103  
15

AB Title compns. comprise coloring materials, water, and  
water soluble organic solvents comprising 4-16% a mixture of 2-8%  
diethylene glycol and 0.7-1.0 (weight ratio to diethylene  
glycol) 2,2'-thiodiethanol. Thus, an ink  
jet composition with surface tension  
31 dyne/cm and viscosity 3.2 cps comprising C.I.  
Acid Yellow 23 3.0, ethylene glycol Bu ether 6.0, Tergitol  
nonanionic surfactant 1.0, diethylene glycol 6,  
and 2,2'-thioethanol 6% was applied on a plain paper showing no  
blotting, no bleeding, and good continuous discharge stability and  
storage stability.

IT 111-46-6, Diethylene glycol, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(ink compns. for ink jet recording)

RN 111-46-6 HCAPLUS

CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)

HO-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-OH

IC ICM C09D011-00

ICS B41J002-01; B41M005-00

CC 42-12 (Coatings, Inks, and Related Products)  
 ST ink **compn** diethylene glycol thiodiethanol jet  
 recording  
 IT Dyes  
 (acid; ink **compns.** for ink jet  
 recording)  
 IT Dyes  
 (direct; ink **compns.** for ink jet  
 recording)  
 IT Reactive dyes  
 (ink **compns.** for ink jet recording)  
 IT **Inks**  
 (jet-printing, water-thinned; ink  
**compns.** for ink jet recording)  
 IT Dyes  
 (water-soluble; ink **compns.** for ink jet  
 recording)  
 IT 111-46-6, Diethylene glycol, uses 111-48-8,  
 2,2'-Thiodiethanol 1934-21-0, C.I. Acid Yellow 23 2650-18-2,  
 C.I. Acid Blue 9 3520-42-1, C.I. Acid Red 52 12222-04-7, C.I.  
 Direct Blue 199 98114-32-0, C.I. Reactive Red 180  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (ink **compns.** for ink jet recording)

L38 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:686583 HCAPLUS  
 DOCUMENT NUMBER: 137:202809  
 TITLE: Water resistant and water-thinned ink-  
 jet printing ink  
 compositions with good discharge and  
 storage stability and their printing method  
 INVENTOR(S): Onishi, Yasuharu; Endo, Hiroyuki; Ueki, Hiroyuki  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002256185	A	20020911	JP 2001-56951	200103 01

PRIORITY APPLN. INFO.: JP 2001-56951  
 200103  
 01

AB The **composition** comprises a colorant, an organic solvent and a  
**surfactant**, wherein the droplets in total pixel is arranged  
 to two picture in a condition of 1 droplet amount 20 pL and resolution  
 720 dpi. The optical d. difference of the two pictures OD2 - OD1  
 $\geq 0.05$ , wherein OD1 = optical d. of first picture which is  
 placed at room temperature for 3 h, dipped in water at 25° and  
 dried for 3 h at room temperature and OD2 = optical d. of second picture  
 which is placed at a temperature selected from 30° to 80°  
 for 3 h, dipped in water at 25° and dried for 3 h at room



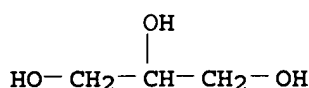
temperature Thus, a ink composition comprising Reactive Red 24 3, polyethylene glycol 200 15, glycerol 10, nonionic surfactant 1, triethanolamine 2 and ion-exchanged water balanced showed surface tension 30.4 dyne/cm, viscosity 3.3 cps and pH 9.0.

IT 56-81-5, Glycerol, uses 57-55-6, Propylene glycol, uses 111-46-6, Diethylene glycol, uses

RL: NUU (Other use, unclassified); USES (Uses)  
(water resistant and water-thinned ink-jet printing ink compns. with good discharge and storage stability and their printing method)

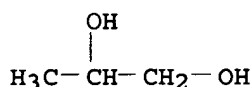
RN 56-81-5 HCAPLUS

CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



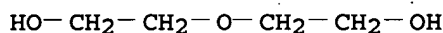
RN 57-55-6 HCAPLUS

CN 1,2-Propanediol (8CI, 9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS

CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC ICM C09D011-00

ICS B41J002-01; B41M005-00

CC 42-12 (Coatings, Inks, and Related Products)

ST ink jet printing water thinned  
discharge storage stability; water resistance colorant  
surfactant ink

IT Inks

(jet-printing, water-thinned; water resistant and water-thinned ink-jet printing ink compns. with good discharge and storage stability and their printing method)

IT Surfactants

(nonionic; water resistant and water-thinned ink-jet printing ink compns. with good discharge and storage stability and their printing method)

IT Ink-jet printers

Ink-jet printing  
Pigments, nonbiological  
(water resistant and water-thinned ink-jet printing ink compns. with good discharge and storage stability and their printing method)

IT Polyoxyalkylenes, uses

RL: NUU (Other use, unclassified); USES (Uses)  
 (water resistant and water-thinned ink-jet  
 printing ink compns. with good  
 discharge and storage stability and their printing method)

IT 56-81-5, Glycerol, uses 57-55-6, Propylene  
 glycol, uses 107-21-1, Ethylene glycol, uses  
 111-46-6, Diethylene glycol, uses 112-34-5,  
 Diethylene glycol monobutyl ether 143-22-6, Triethylene  
 glycol monobutyl ether 25322-68-3, Polyethylene  
 glycol

RL: NUU (Other use, unclassified); USES (Uses)  
 (water resistant and water-thinned ink-jet  
 printing ink compns. with good  
 discharge and storage stability and their printing method)

IT 3520-42-1, Acid Red 52 6360-07-2, Acid Red 37 12222-49-0, C.I.  
 Direct Red 225 12225-32-0, C.I. Reactive black 17 12226-47-0,  
 C.I. Reactive Yellow 15 12769-12-9, C.I. Reactive Yellow 55  
 70210-20-7, Reactive Red 24 88385-24-4, C.I. Reactive Blue 80  
 154999-54-9, Acid Yellow 142

RL: TEM (Technical or engineered material use); USES (Uses)  
 (water resistant and water-thinned ink-jet  
 printing ink compns. with good  
 discharge and storage stability and their printing method)

L38 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:98739 HCAPLUS  
 DOCUMENT NUMBER: 136:152890  
 TITLE: Ink compositions for ink  
 jet recording and image recording  
 methods and recorded matters  
 INVENTOR(S): Miyabayashi, Toshiyuki  
 PATENT ASSIGNEE(S): Seiko Epson Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002038061	A	20020206	JP 2000-221564	200007 21

PRIORITY APPLN. INFO.: JP 2000-221564

200007  
21

AB In a sin  $\theta$  (abscissa) - viscosity (ordinate) curve for  
 an ink, the zero shear viscosity is 3-10 mPa.s at sin  
 $\theta = 0$  ( $\theta$ ) and the slop is -0.1 to 0, where  $\theta$  is an  
 inclination angle and the viscosity is determined by a rolling  
 ball viscometer at 20°. Thus, an ink contained  
 self-dispersible carbon black 7, glycerin 10, diethylene  
 glycol 10, triethylene glycol mono-Bu ether 5,  
 1,3-dimethyl-2-imidazolidinone 4, Olfine E 1010 1, triethanolamine  
 0.9 part, and H<sub>2</sub>O.

IC ICM C09D011-00

ICS B41J002-01; B41M005-00; C09C001-24; C09C001-36; C09C001-56;  
C09C003-00

CC 42-12 (Coatings, Inks, and Related Products)

ST rolling ball viscometer jet printing  
ink; zero shear viscosity jet  
printing ink

IT Carbonyl group  
Carboxyl group  
Functional groups  
Hydroxyl group  
(-modified pigments; viscosity of ink compns.  
for ink jet recording)

IT Surfactants  
(anionic; viscosity of ink compns. for  
ink jet recording)

IT Polymers, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(dispersing agents; viscosity of  
ink compns. for ink jet recording)

IT Pigments, nonbiological  
(hydrophilic; viscosity of ink compns. for  
ink jet recording)

IT Inks  
(jet-printing; viscosity of ink  
compns. for ink jet recording)

IT Surfactants  
(nonionic; viscosity of ink compns. for  
ink jet recording)

IT Carbon black, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(reaction products with hypochlorous acid; viscosity of  
ink compns. for ink jet recording)

IT Functional groups  
(sulfo group, -modified pigments; viscosity of ink  
compns. for ink jet recording)

IT Disperse dyes  
Dispersing agents  
Hydrophilicity  
Microcapsules  
Oxidation  
Polar solvents  
Sulfonation  
Surface tension  
Viscosity  
(viscosity of ink compns. for ink  
jet recording)

IT 147-14-8, C.I. Pigment Blue 15:3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(C.I. Pigment Blue 15:3; viscosity of ink  
compns. for ink jet recording)

IT 980-26-7, C.I. Pigment Red 122  
RL: TEM (Technical or engineered material use); USES (Uses)  
(C.I. Pigment Red 122; viscosity of ink compns  
for ink jet recording)

IT 13515-40-7, C.I. Pigment Yellow 73  
RL: TEM (Technical or engineered material use); USES (Uses)  
(C.I. Pigment Yellow 73; viscosity of ink  
compns. for ink jet recording)

IT 9014-85-1, Olfine E 1010  
RL: MOA (Modifier or additive use); USES (Uses)

(Olfine E 1010; **viscosity of ink compns. for ink jet recording**)

IT 102561-65-9, Acrylic acid-styrene copolymer triethanolamine salt  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (**dispersing agents; viscosity of ink compns. for ink jet recording**)

IT 79-10-7D, Acrylic acid, esters, polymers with acrylic acid and styrene 79-10-7D, Acrylic acid, polymers with acrylic acid esters and styrene 100-42-5D, Styrene, polymers with acrylic acid and acrylic acid esters 276264-07-4  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (microcapsules; **viscosity of ink compns. for ink jet recording**)

IT 5329-14-6D, Sulfamic acid, reaction products with carbon black 7790-92-3D, Hypochlorous acid, reaction products with carbon black  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**viscosity of ink compns. for ink jet recording**)

L38 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:241673 HCAPLUS  
 DOCUMENT NUMBER: 134:267860  
 TITLE: Ink **composition** and processes thereof  
 INVENTOR(S): Boils, Danielle C.; Mayo, James D.; Gagnon, Yvan; MacKinnon, David N.  
 PATENT ASSIGNEE(S): Xerox Corporation, USA  
 SOURCE: U.S., 8 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6210473	B1	20010403	US 1999-420537	19991018

PRIORITY APPLN. INFO.: US 1998-107581P P 19981109

AB An ink **composition** includes an aqueous liquid vehicle, a colorant, and an amino bisphosphonate **dispersant compound**  
 Thus, an ink contained poly(ethylene oxide) amino bisphosphonate, Raven 5750, sulfolane, ethylene glycol, and H2O.

IC ICM C09D011-02  
 INCL 106031430  
 CC 42-12 (Coatings, Inks, and Related Products)  
 ST carbon black **dispersant jet printing ink**; polyoxyalkylene amino bisphosphonate **dispersant ink**

IT Carbon black, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (RAVEN 5750, CSX 440L, Flame Black; ink containing polyoxyalkylene amino bisphosphonates as **dispersants**)

IT Biocides  
 Chelating agents

Coloring materials

Humectants

Nozzles

Paper

Pigments, nonbiological

Plastic films

Surface tension

Transparent materials

Viscosity

Wood

(ink containing polyoxyalkylene amino bisphosphonates as dispersants)

IT Metals, miscellaneous

Plastics, miscellaneous

RL: MSC (Miscellaneous)

(ink containing polyoxyalkylene amino bisphosphonates as dispersants)

IT Inks

(jet-printing; ink containing

polyoxyalkylene amino bisphosphonates as dispersants)

IT 331948-54-0

RL: MOA (Modifier or additive use); USES (Uses)

(ink containing polyoxyalkylene amino bisphosphonates as dispersants)

IT 1317-61-9, Magnetite, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(ink containing polyoxyalkylene amino bisphosphonates as dispersants)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L38 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:333025 HCAPLUS

DOCUMENT NUMBER: 131:20372

TITLE: Water-based ink composition containing  
white pigment for ink jet  
printing

INVENTOR(S): Kihara, Tetsuji; Yagiu, Tatsuya

PATENT ASSIGNEE(S): Orient Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

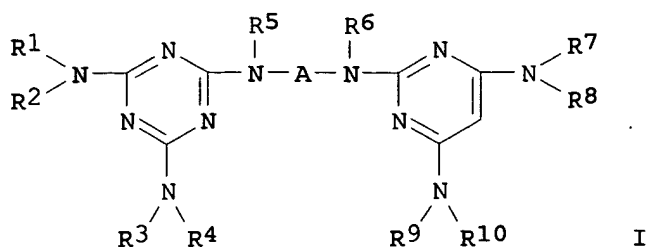
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 11140365	A	19990525	JP 1997-304223	199711 06
			<--	
JP 3833797	B2	20061018		
PRIORITY APPLN. INFO.:			JP 1997-304223	199711 06
			<--	
OTHER SOURCE(S):	MARPAT	131:20372		

GI



- AB Title ink **composition** with excellent printing quality and storage stability contains organic white pigment of alkyene melamine derivs. described by a structural formula (I), where R1, R2, R3, R4, R7, R8, R9 and R10 are independently H atom or C1-4 alkyl groups, optionally, R1 and R2, R3 and R4, R7 and R8, and R9 and R10 form ring structures with N atom, R5 and R6 are independently H atom, C1-4 alkyl or alicyclic groups, and A is C2-3 alkyene group. Thus an ink **composition** containing Shigenox OWP 25, rosin-modified maleic acid resin ammonium salt 10, ethanol 5, ethylene glycol 5, and ion-exchanged water 55 parts was prepared, showing good injecting property, storage stability, white color visibility, and adhesion with black coat paper.
- IC ICM C09D011-02  
ICS B41J002-01; C09B057-00
- CC 42-12 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 41
- ST alkyene melamine deriv white pigment **ink jet printing compn**
- IT **Inks**  
(**jet-printing**; preparation and properties of water-based ink **composition** containing alkyene melamine derivative white pigment for **ink jet printing**)
- IT Alkyd resins  
RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)  
(maleated, ammonium salts, **dispersing agent**, ink **composition** containing; preparation and properties of water-based ink **composition** containing alkyene melamine derivative white pigment for **ink jet printing**)
- IT Rosin  
RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)  
(maleic acid resin modified with, **dispersing agent**, ink **composition** containing; preparation and properties of water-based ink **composition** containing alkyene melamine derivative white pigment for **ink jet printing**)
- IT Adhesion, physical  
Particle size  
Pigments, nonbiological  
**Surface tension**  
**Viscosity**  
(preparation and properties of water-based ink **composition** containing alkyene melamine derivative white pigment for **ink jet printing**)

- IT 110-16-7D, Maleic acid, reaction products with acrylic acid-styrene copolymer, ammonium salts 25085-34-1D, Acrylic acid-styrene copolymer, reaction products with maleic acid, ammonium salts 29299-70-5, Maleic acid-styrene copolymer, ammonium salt 35209-54-2, Acrylic acid-styrene copolymer, ammonium salt  
 RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)  
 (dispersing agent, ink composition containing; preparation and properties of water-based ink composition containing alkylene melamine derivative white pigment for ink jet printing)
- IT 42445-78-3, Shigenox OWP  
 RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)  
 (pigment; preparation and properties of water-based ink composition containing alkylene melamine derivative white pigment for ink jet printing)
- IT 188023-47-4  
 RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)  
 (rosin-modified, dispersing agent, ink composition containing; preparation and properties of water-based ink composition containing alkylene melamine derivative white pigment for ink jet printing)

L38 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:682471 HCAPLUS

DOCUMENT NUMBER: 129:291256

TITLE: Ink-jet ink

compositions for printing onto fabrics with low smear properties

INVENTOR(S): Brown, Benjamin; Williams, Corey

PATENT ASSIGNEE(S): Markem Corporation, USA

SOURCE: PCT Int: Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9845379	A1	19981015	WO 1998-US5610	19980323
<--				
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5888287	A	19990330	US 1997-827649	19970410
<--				

AU 9865767 A 19981030 AU 1998-65767 199803  
23

EP 973837 A1 20000126 EP 1998-911923 199803  
23

EP 973837 B1 20030528 <--

R: DE, FR, GB, IT  
PRIORITY APPLN. INFO.: US 1997-827649 A 199704  
10

WO 1998-US5610 W 199803  
23

AB Title ink **composition** comprises a propylene **glycol**  
ether and/or a propylene **glycol** ether acetate, a  
**surfactant** and a colorant. Thus, 85.58 parts Dowanol TPM  
(tripropylene **glycol** Me ether) was mixed with Solsperse  
20000 **dispersant** 6.70, Degussa FW 200 carbon black 6.70  
and fluorad FC 430 **surfactant** 0.75 parts to give an ink  
having **surface tension** 22.5 dynes/cm and  
**viscosity** 18 cps, which was **jet**  
**printed** on a fabric, showing reduced smear properties.

IT 57-55-6D, Propylene **glycol**, ethers or ether  
acetates 25498-49-1, Dowanol TPM  
RL: TEM (Technical or engineered material use); USES (Uses)  
(ink-jet ink **comps.** for  
printing onto fabrics with low smear properties)

RN 57-55-6 HCAPLUS

CN 1,2-Propanediol (8CI, 9CI) (CA INDEX NAME)

OH

H<sub>3</sub>C-CH-CH<sub>2</sub>-OH

RN 25498-49-1 HCAPLUS

CN Propanol, [2-(2-methoxymethylethoxy)methylethoxy]- (9CI) (CA INDEX  
NAME)

HO-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-OMe

3 (D1-Me)

IC ICM C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

ST **jet ink printing** fabric smear;  
propylene **glycol** ether **surfactant jet**  
**ink**; acetate propylene **glycol** ether  
**surfactant ink**

IT **Surfactants**



(fluorosurfactants; ink-jet ink compns. for printing onto fabrics with low smear properties)

IT Textiles  
(ink-jet ink compns. for printing onto fabrics with low smear properties)

IT Inks  
(jet-printing; ink-jet ink compns. for printing onto fabrics with low smear properties)

IT Surfactants  
(nonionic, fluoro; ink-jet ink compns. for printing onto fabrics with low smear properties)

IT 57-55-6D, Propylene glycol, ethers or ether acetates 25498-49-1, Dowanol TPM 55934-93-5, Tripropylene glycol n-butyl ether 88917-22-0, Dipropylene glycol methyl ether acetate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(ink-jet ink compns. for printing onto fabrics with low smear properties)

IT 11114-17-3, Fluorad FC 430  
RL: MOA (Modifier or additive use); USES (Uses)  
(surfactant; ink-jet ink compns. for printing onto fabrics with low smear properties)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:457136 HCAPLUS

DOCUMENT NUMBER: 129:123913

TITLE: Ink compositions for thermal ink jet printing

INVENTOR(S): Gundlach, Kurt B.; Sanchez, Luis A.; Colt, Richard L.

PATENT ASSIGNEE(S): Xerox Corp., USA

SOURCE: U.S., 13 pp.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5776230	A	19980707	US 1997-960991	19971030
EP 913437	A1	19990506	EP 1998-116027	19980825
EP 913437	B1	20021211		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11199815	A	19990727	JP 1998-299226	

199810  
21

&lt;--

PRIORITY APPLN. INFO.:

US 1997-960991

A

199710  
30

&lt;--

OTHER SOURCE(S): MARPAT 129:123913

AB Lightfast, storage stable aqueous inks containing a dye, i.e., Direct Blue 199, Direct Yellow 132, Acid Yellow 17, Reactive Red 180, and(or) Acid Red 52, and a fluorinated material having the formula  $[F_3C(F_2C)_nCH:CHCH_2OCH(OH)CH_2NCH_2COO-][X+]$ , where X = a cation and n = 3-20, are substantially free of imidazole and exhibit improved colorimetry and reduced intercolor bleed when used for thermal ink jet printing. Thus, a compn containing H<sub>2</sub>O, Dowicil 150/200 biocide, polyoxyethylenated bisphenol A, Dowanol TPM tripropylene glycol monomethyl ether, Projet Magenta IT (Reactive Red 180), and Acid Red 52 was subjected to ultrasonification for 60 min at an amplitude setting of 5. The composition was then mixed with 1,4-diazabicyclo(2.2.2)octane, citric acid, hexamethonium bromide hydrate, and Lodyne P 502 fluorocarbon material. After filtering, the resulting magenta ink composition had a viscosity of 4.34 cP at 25°, a pH of 8.56 at 25°, a conductivity of 8.46 mmho, and a surface tension of 24.6 dynes/cm. When incorporated into a thermal ink jet printer and printed onto paper the prints formed exhibited low intercolor bleed with a MFLEN value of 5.

IT 25498-49-1, Dowanol TPM  
RL: TEM (Technical or engineered material use); USES (Uses)  
(penetrant material, storage stable aqueous inks containing; with improved colorimetry and reduced intercolor bleed in thermal ink jet printing)

RN 25498-49-1 HCAPLUS

CN Propanol, [2-(2-methoxymethylethoxy)methylethoxy]- (9CI) (CA INDEX NAME)

HO-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-OMe

3 (D1-Me)

IC ICM C09D011-02

INCL 106031430

CC 42-12 (Coatings, Inks, and Related Products)

ST storage stable ink thermal jet printing  
; fluoroalkenyloxyhydroxyethylglycine salt ink thermal jet printing; fluorocarbon compd ink thermal jet printing

IT Inks  
(jet-printing, imidazole-free; with improved colorimetry and reduced intercolor bleed in thermal ink jet printing)

IT Polyoxyalkylenes, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(surfactant, storage stable aqueous inks containing; with improved colorimetry and reduced intercolor bleed in thermal

ink jet printing)  
IT Ink-jet printing  
(thermal; with improved colorimetry and reduced intercolor bleed  
in thermal ink jet printing)  
IT 98114-32-0, Reactive Red 180  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Pro-Jet Magenta 1T, dye, storage stable aqueous inks containing; with  
improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 61968-26-1, Direct Yellow 132  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Pro-Jet Yellow 1G, dye, storage stable aqueous inks containing; with  
improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 210296-87-0, Dowicil 150/200  
RL: TEM (Technical or engineered material use); USES (Uses)  
(biocide, storage stable aqueous inks containing; with improved  
colorimetry and reduced intercolor bleed in thermal ink  
jet printing)  
IT 280-57-9, 1,4-Diazabicyclo[2.2.2]octane  
RL: TEM (Technical or engineered material use); USES (Uses)  
(buffer, storage stable aqueous inks containing; with improved  
colorimetry and reduced intercolor bleed in thermal ink  
jet printing)  
IT 3520-42-1, Acid Red 52 12222-04-7, Direct Blue 199  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dye, storage stable aqueous inks containing; with improved colorimetry  
and reduced intercolor bleed in thermal ink jet  
printing)  
IT 55-97-0, Hexamethonium bromide 69762-88-5  
RL: TEM (Technical or engineered material use); USES (Uses)  
(liposome stabilizer, storage stable aqueous inks containing; with  
improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 77-92-9, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(liposome structure stabilizer, storage stable aqueous inks containing;  
with improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 25498-49-1, Dowanol TPM  
RL: TEM (Technical or engineered material use); USES (Uses)  
(penetrant material, storage stable aqueous inks containing; with  
improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 107-43-7, Betaine 209263-99-0, Lodyne P 502  
RL: TEM (Technical or engineered material use); USES (Uses)  
(storage stable aqueous inks containing; with improved colorimetry and  
reduced intercolor bleed in thermal ink jet  
printing)  
IT 56-40-6D, Glycine, fluoroalkenyloxyhydroxyethyl derivs., salts, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(storage stable inks containing; with improved colorimetry and  
reduced intercolor bleed in thermal ink jet  
printing)  
IT 25322-68-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(surfactant, storage stable aqueous inks containing; with  
improved colorimetry and reduced intercolor bleed in thermal  
ink jet printing)  
IT 32492-61-8

RL: TEM (Technical or engineered material use); USES (Uses)  
 (viscosity and stability enhancer, storage stable aqueous  
 inks containing; with improved colorimetry and reduced intercolor  
 bleed in thermal ink jet printing)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L38 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:505949 HCAPLUS

DOCUMENT NUMBER: 119:105949

TITLE: Ink-jet recording method  
 using aqueous ink compositions

INVENTOR(S): Yanase, Noryuki; Tsukahara, Michi; Itano,  
 Masaaki

PATENT ASSIGNEE(S): Seiko Epson Corp, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05064954	A	19930319	JP 1991-229019	199109 09
JP 3262568	B2	20020304	JP 1991-229019	199109 09

AB In a method of recording using the title ink compns. in  
 which the ink is expelled from a nozzle under a condition of  
 operating frequency  $\geq 3$  kHz and ink expelling nozzle resolution  
 $\geq 180$  dots/in. to form records on a receptor, the ink  
 composition contains a coloring agent, an organic solvent, and a  
 nonionic surfactant, has a surface  
 tension at  $25^\circ \leq 35$  dyn/cm and a  
 viscosity at  $20^\circ \leq 20$  mPa.sec, and is expelled  
 at  $\leq 0.1$   $\mu\text{g}/\text{dot}$ . The ink compns. show good  
 frequency response and provide high quality images in high speed  
 recording. Thus, ink jet recording was carried  
 out with an aqueous ink (surface tension 30.1  
 dyn/cm; viscosity 3.5 mPa.sec) comprising C.I. Direct  
 Black 19 (dye), glycerin, diethylene glycol, Noigen ET 135  
 (surfactant), and urea by using a nozzle (frequency 3 kHz;  
 resolution 180 dots/in.; ink expelling 0.1  $\mu\text{g}/\text{dot}$ ).

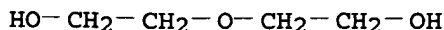
IT 111-46-6, Diethylene glycol, uses

RL: USES (Uses)

(ink solvent, for ink-jet recording)

RN 111-46-6 HCAPLUS

CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC ICM B41M005-00  
ICS C09D011-00  
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST **ink jet recording aq ink;**  
**surfactant nonionic aq ink compn**  
IT Alcohols, compounds  
RL: USES (Uses)  
(C12-14-branched, ethoxylated, **surfactant**, ink containing, for **ink-jet recording**)  
IT **Printing, nonimpact**  
(**ink-jet, surface tension** and **viscosity-controlled**)  
IT **Surfactants**  
(nonionic, ink containing, for **ink-jet recording**)  
IT 64-17-5, Ethanol, uses 111-46-6, Diethylene glycol, uses 112-27-6, Triethylene glycol 25322-68-3, Polyethylene glycol  
RL: USES (Uses)  
(ink solvent, for **ink-jet recording**)  
IT 126-86-3, Surfynol 104 9014-85-1, Surfynol 465 9036-19-5, Noigen EA 120 149175-82-6, Noigen ET 116B  
RL: USES (Uses)  
(**surfactant**, ink containing, for **ink-jet recording**)

L38 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1982:105977 HCAPLUS  
DOCUMENT NUMBER: 96:105977  
TITLE: An ink **composition** for **ink-jet recording**  
INVENTOR(S): Uehara, Masafumi; Itano, Mitsuyoshi  
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan  
SOURCE: Brit. UK Pat. Appl., 6 pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2070049	A	19810903	GB 1981-5059	19810218
			<--	
GB 2070049	B	19840229		
JP 56115370	A	19810910	JP 1980-19516	19800218
			<--	
DE 3105525	A1	19811210	DE 1981-3105525	19810216
			<--	
CA 1157639	A1	19831129	CA 1981-371063	19810217

PRIORITY APPLN. INFO.:

<--  
JP 1980-19516A 198002  
18

AB The title **compns.** which reduce clogging of the jets comprise a water-soluble acid or direct dye and a polyethylene glycol with d.p. 4-25 to give a **composition** with **viscosity** 4-20 cP at 25° and **surface tension** 40-60 dyne/cm. The **compns.** optionally contain a bactericide, a **surfactant**, inorg. buffer, and a chelating agent. Thus, a **composition** containing C.I. Direct Black 17 2.5, PEG [25322-68-3] (mol. weight 200, d.p. 4.1) 47.2, water 50.1, K<sub>2</sub>CO<sub>3</sub> 0.2, and Bacillat 0.1% had **viscosity** 7.8 cP at 25° and **surface tension** 58 dyne/cm.

IC C09D011-02

CC 42-12 (Coatings, Inks, and Related Products)

ST polyethylene glycol dye printing ink

IT **Inks**  
(jet-printing, containing polyethylene glycol)

IT 25322-68-3

RL: USES (Uses)

(inks, jet-printing)

L38 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:517260 HCAPLUS

DOCUMENT NUMBER: 95:117260

TITLE: Ink **composition** for ink  
jet recordingINVENTOR(S): Makishima, Hiroshi; Toyoda, Tsunehiko; Okamura,  
Noriaki; Yano, Hirofumi; Mizoguchi, Akira;  
Hiromori, Yasutaka

PATENT ASSIGNEE(S): Dai Nippon Toryo Co., Ltd., Japan

SOURCE: U.S., 9 pp. Cont.-in-part of U.S. Ser. No.  
747,792, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 4279653	A	19810721	US 1980-139166	198004 07
JP 52074406	A	19770622	JP 1975-145583	197512 05
FR 2333844	A1	19770701	FR 1976-36344	197612 02

FR 2333844 B1 19780630

PRIORITY APPLN. INFO.:

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JP 1975-145583

A 197512

05

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US 1976-747792

A2

197612  
06

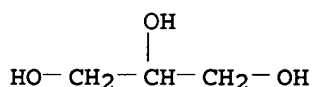
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AB Jet-printing inks giving stable droplets at high speed contain 5-40% H<sub>2</sub>O-soluble wetting agents, 0.1-10% H<sub>2</sub>O-soluble dyes, 0.5-10% O absorbers (sulfites), and 300-5000 ppm preservative forming no precipitate, in aqueous solution. Thus, an ink containing 20 parts polyethylene glycol [25322-68-3] (mol. weight 300), 5 parts C.I. Acid Red 92, 2 parts Na<sub>2</sub>SO<sub>3</sub>, 73 parts H<sub>2</sub>O, and <2000 ppm Na dehydroacetate had surface tension 40 dyne/cm, viscosity 2.5 cP at 25°, and threshold voltage 100-150 Vpp, and after 18 mo storage contained <0.07 mmol/mL O and had threshold voltage <250 Vpp.

IT 56-81-5, uses and miscellaneous 111-46-6, uses and miscellaneous  
RL: USES (Uses)  
(wetting agents, for jet-printing inks)

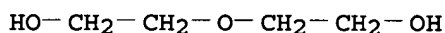
RN 56-81-5 HCAPLUS

CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 111-46-6 HCAPLUS

CN Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC C09D011-00

INCL 106022000

CC 42-12 (Coatings, Inks, and Related Products)

ST ink jet printing; polyoxyethylene  
ink jet printing; sulfite oxygen scavenger ink; wetting agent ink glycol

IT Wetting agents  
(glycols, for jet-printing inks)

IT Glycols, uses and miscellaneous  
RL: USES (Uses)  
(wetting agents, for jet-printing inks)

IT Inks  
(jet-printing, containing glycol wetting agents and sulfite oxygen scavengers)

IT 7757-83-7  
RL: USES (Uses)  
(oxygen scavengers, for jet-printing inks)

IT 56-81-5, uses and miscellaneous 110-80-5 111-46-6  
, uses and miscellaneous 25322-68-3

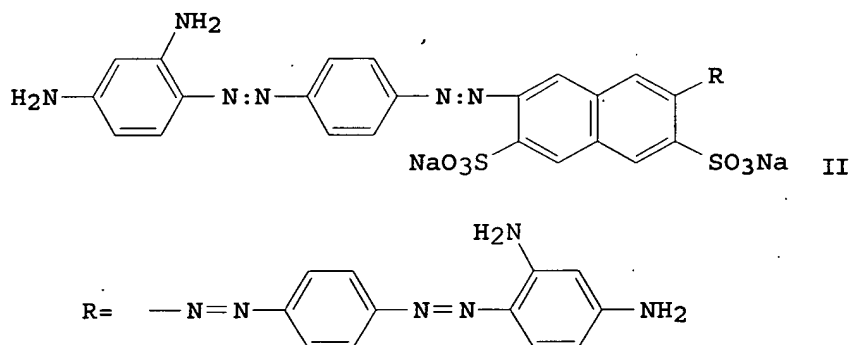
RL: USES (Uses)  
(wetting agents, for jet-  
printing inks)

L38 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1977:173277 HCAPLUS  
DOCUMENT NUMBER: 86:173277  
TITLE: Aqueous ink compositions for  
jet printing  
INVENTOR(S): Shinzo, Kinji; Aoki, Takayoshi; Takano, Rikuo.  
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan; Nippon  
Telegraph and Telephone Public Corp.  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52012008	A	19770129	JP 1975-87361	197507 18
JP 54016243	B	19790621	JP 1975-87361	197507 18

PRIORITY APPLN. INFO.: <-- <--

GI



AB Aqueous ink compns. for jet  
printing were prepared by dissolving a water-soluble direct dye  
such as C.I. Direct Blue 86 (I) [1330-38-7] or II [6428-31-5], Na  
dehydroacetate (III) [4418-26-2] (preservative), and wetting  
agents in water. Thus, an ink composition (  
viscosity 2.4 cP and surface tension 54  
dynes/cm at 25°) comprising I 3.7, polyethylene  
glycol [25322-68-3] 17.0, III 1.3, and distilled water 78.0  
parts was injected through jet printing nozzles



(hole diameter 50-100  $\mu$ ) without plugging for  $\geq 3000$  h.

IC C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 40

ST **jet printing ink compn**; azo  
dye ink **compn**; copper phthalocyanine ink **compn**;  
preservative dehydroacetate

IT Fungicides and Fungistats  
(dehydroacetic acid sodium salt, for **jet printing inks**)

IT **Inks**  
(**jet printing**, containing direct dye-fungicide-glycol **compns.**)

IT 4418-26-2  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(fungicides, **jet printing inks** containing direct dyes and)

IT 112-27-6 1330-38-7 6428-31-5 25322-68-3  
RL: USES (Uses)  
(inks containing fungicides and, for **jet printing**)

L38 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1977:173276 HCAPLUS

DOCUMENT NUMBER: 86:173276

TITLE: Aqueous ink compositions for **jet printing**

INVENTOR(S): Shinzo, Kinji; Aoki, Takayoshi; Takano, Rikuo

PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan; Nippon Telegraph and Telephone Public Corp.

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

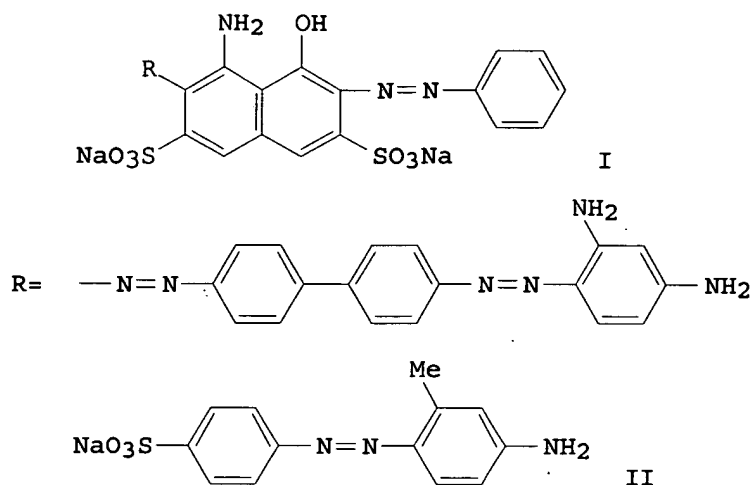
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52012010	A	19770129	JP 1975-87363	19750718
JP 54016245	B	19790621	JP 1975-87363	19750718

PRIORITY APPLN. INFO.: A

GI



- AB Aqueous ink compns. for jet printing were prepared by dissolving a water-soluble dye (I [1937-37-7] or II [62570-47-2]), 6-acetoxy-2,4-dimethyl-m-dioxane (III) [828-00-2] (preservative), and wetting agents in water. Thus, an ink composition ( surface tension 53.5 dynes/cm and viscosity 1.65 cP at 25°) comprising I 2.5, III 0.8, polyethylene glycol [25322-68-3] 10.5, and distilled water 86.2 parts was injected through jet printing nozzles (hole diameter 50-100  $\mu$ ) without plugging for  $\geq 3000$  h.
- IC C09D011-00
- CC 42-12 (Coatings, Inks, and Related Products)
- ST jet printing ink compn; azo dye ink compn; preservative dioxane
- IT Fungicides and Fungistats  
(acetoxydimethyldioxane, for jet printing inks)
- IT Inks  
(jet printing, containing azo dye-fungicide-glycol compns.)
- IT 828-00-2  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(fungicides, jet printing inks containing glycols and)
- IT 62570-47-2  
RL: USES (Uses)  
(ink containing fungicide and, for jet printing)
- IT 112-60-7 1937-37-7 25322-68-3  
RL: USES (Uses)  
(inks containing fungicides and, for jet printing)

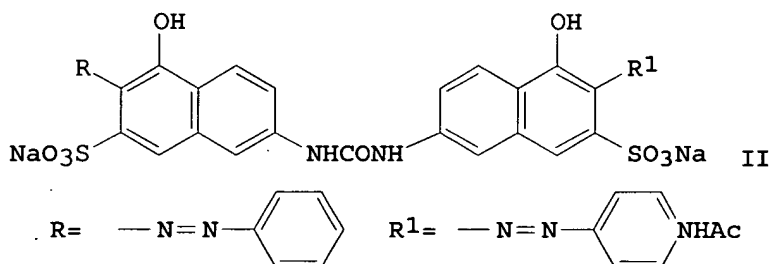
L38 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1977:173275 HCAPLUS  
 DOCUMENT NUMBER: 86:173275  
 TITLE: Aqueous ink compositions for

**jet printing**  
**INVENTOR(S):** Shinzo, Kinji; Aoki, Takayoshi; Takano, Rikuo  
**PATENT ASSIGNEE(S):** Dainippon Ink and Chemicals, Inc., Japan; Nippon Telegraph and Telephone Public Corp.  
**SOURCE:** Jpn. Kokai Tokkyo Koho, 5 pp.  
**CODEN:** JKXXAF  
**DOCUMENT TYPE:** Patent  
**LANGUAGE:** Japanese  
**FAMILY ACC. NUM. COUNT:** 1  
**PATENT INFORMATION:**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52012009	A	19770129	JP 1975-87362	19750718
JP 54016244	B	19790621	JP 1975-87362	19750718

**PRIORITY APPLN. INFO.:** <--  
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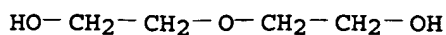
GI



**AB** Aqueous ink compns. for jet printing were prepared by dissolving a water-soluble dye [C.I. Direct Blue 86 (I) [1330-38-7] or II [3441-14-3]], 1,2-benzisothiazolin-3-one triethanolamine salt (III) [62570-48-3] (preservative), and wetting agents in water. Thus, an ink composition (viscosity 1.6 cP and surface tension 63 dynes/cm at 25°) comprising I 3.5, diethylene glycol [111-46-6] 12.5, III 1.0, and distilled water 83.0 parts was injected through jet printing nozzles (hole diameter 50-100 μ) without plugging for ≥3000 h.

**IT** 111-46-6, uses and miscellaneous  
 RL: USES (Uses)  
 (inks containing fungicides and, for jet printing)

**RN** 111-46-6 HCAPLUS  
**CN** Ethanol, 2,2'-oxybis- (9CI) (CA INDEX NAME)



IC C09D011-00  
CC 42-12 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 40  
ST **jet printing ink compn**; azo  
dye ink **compn**; copper phthalocyanine ink **compn**;  
preservative benzisothiazolinone  
IT Fungicides and Fungistats  
(benzisothiazolinone triethanolamine salt, for **jet  
printing inks**)  
IT **Inks**  
(**jet printing**, containing direct dye-fungicide-  
glycol **compns.**)  
IT 62570-48-3  
RL: AGR (Agricultural use); BAC (Biological activity or effector,  
except adverse); BSU (Biological study, unclassified); BIOL  
(Biological study); USES (Uses)  
(fungicides, **jet printing inks**  
containing direct dyes and)  
IT **111-46-6**, uses and miscellaneous 112-60-7 1330-38-7  
3441-14-3  
RL: USES (Uses)  
(inks containing fungicides and, for **jet printing**  
)

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